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THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

EDITED BY
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COD-LIVER OIL IN HOT WEATHER.

DIETETICS.

Fortunately the taste of an individual, if it be not perverted, is the very best guide as to the food required. The profoundest student of dietetics must fall back upon his taste for guidance the same as the greatest ignoramus. It is not possible for us to ascertain the accurate composition of food to be eaten daily ; for in eating, as in other things, variety is the spice of life. Experiments have shown that if life and health are to be preserved something more is required than simply so much albumen, sugar, oil, salts, &c.

MEATS.

It is, of course, undisputed that food is eaten for the force it may liberate on being burnt up in the system. For the heat of the human body is well known to be a slow fire, in which the food is being burned, or oxydised by the oxygen inhaled through the lungs. But some of the food has to replace the worn out, used up tissues, and that which contributes mainly to this is the albumen, such as the white of egg, gluten of bread, fibrine of meat, caseine of milk, &c. This albumen is absolutely indispensable to the sustenance of life, and existence can be maintained longer on meat alone than on any other class of food. The animals which depend upon it solely exhibit traits widely differing from those relying on other aliments. Meat appears to enable an animal to discharge more force in a moment than vegetable products, as instanced in the spring of the tiger compared with the flight of the deer. Hence we find that those nations and people who are meat-eaters exhibit on the whole greater momentum than their differently nourished and less well-fed brethren.

FRUIT.

The vegetable kingdom affords a splendid variety of nutritious and toothsome foods and delicacies, more or less indispensable to man, and capable of sustaining life. But they are best adapted for life in hot countries, and those who live upon them cannot partake so freely of meat as those living in colder climes. Fruits contain subacid and other salts, with much water, all of which exert a goodly influence upon the liver and kidneys ; and we have often heard it said by the inhabitants of warm climates that if one would eat fruit freely in the summer there would be consequent freedom from piles throughout the year.

OILS.

Coming to oils, we find them an indispensable requisite to all. The ills that follow their withdrawal are multiform and serious. A large share of the wasting diseases of infants, such as rickets, consumption, and scrofula, are oft associated with too little fat. The system seems to store up fat for future use as she does nothing else. The hibernating animals put on an overcoat of fat before they betake themselves to their long wintery sleep. Whenever there is a demand for a greater and prolonged generating of heat, there is need for fat.

COD-LIVER OIL IN HOT WEATHER.

It is generally supposed that cod-liver oil is not so well adapted for use in hot as in cold weather, but the fact is, that cod-liver oil, properly taken, will agree in summer as well as at any other season. The body does not withdraw its needs for fat in summer ; and those afflicted with consumption will do well to take in hot weather the Kepler Solution of Cod-Liver Oil, in which the purest oil is perfectly dissolved in a pure malt extract, and is perfectly agreeable to the most fastidious palate. *But by no means dispense with oil.*

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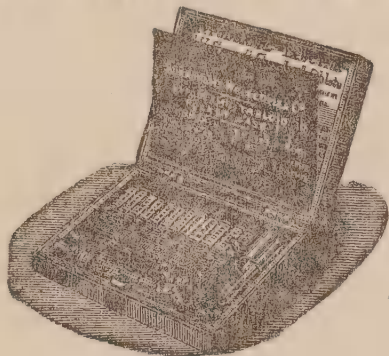
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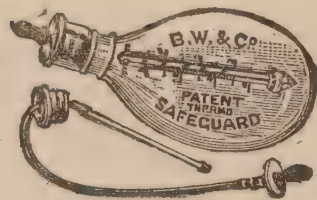
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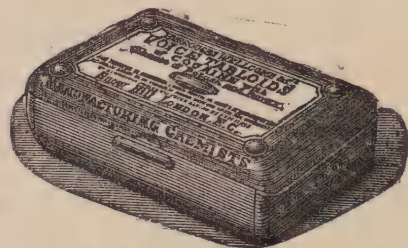
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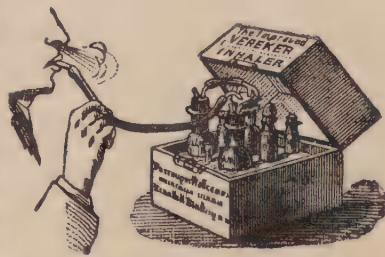
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JULY 1, 1891.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Operations on the Thyroid Gland.*^a By SIR WILLIAM STOKES, M.D., Ch.M., Univ. Dubl., F.R.C.S.I.; Professor of Surgery, Royal College of Surgeons, Ireland.

EVEN a comparatively limited experience in the operation of thyroidectomy, coupled with an examination of the statistical records of the operation, more particularly those published in the Special Report of the Clinical Society of London on the subject of Myxœdema, compels us to recognise, not only the great immediate difficulties and dangers of the operation in the great majority of such cases, but also—notwithstanding what has been said to the contrary by Professors Billroth, Wölfler, Credé, Baumgärtner, and others—the liability to the supervention of operative myxœdema, or cachexia strumipriva, when the thyroid is removed in its entirety.

There seems, in truth, to be as wide a difference of opinion in reference to the liability to the occurrence of this mysterious and, we must admit, unexplained condition, as there have been hypotheses to account for it. Of these latter the chief are, as mentioned by Mr. F. Semon (in his Report on the Results of Total and Partial Extirpation of the Goïtrous Thyroid Gland in Man^b), deficient development or atrophy of the trachea following the

^a Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, May 15, 1891. [For the discussion on this paper see page 77.]

^b Clinical Society's Transactions. Supplement to Vol. XXI. P. 169.

operation (Kocher); injury to the recurrent laryngeal nerves caused during the progress of the operation, or due to inflammation, adhesions, and cicatrisation following it (Baumgärtner); injury to the sympathetic nerve (Baumgärtner); mode of operation; and, lastly, endemic influences.

None of these can be regarded as at all satisfactory, and, as a matter of fact, have been completely disproved. We must, therefore, regretfully confess that as yet no explanation of the occurrence of operative myxœdema has been given that can be accepted.

The wide difference of opinion as to the liability of the condition after complete removal of the gland is notorious; but, without entering into any further statistical details with a view to either verify or disprove the statements made with reference to this point, I may mention that Prof. Bardeleben has not observed it in any of the 15 cases he has had, and that Prof. Billroth noticed it in only 2 out of 146 cases that occurred in his clinique. "It is well known," as Dr. F. Semon observes, "that Prof. Billroth's negative experience, based upon so large a number of operations, has always been pointed to by those surgeons who are disinclined to believe in a connection between the loss of the functions of the gland and the cachexia as a valid proof against this connection. But now it is stated by Prof. Wölfler that out of 22 patients of Prof. Billroth's, who are still living, and whose cases could be utilised for the present inquiry, 1 suffers from tetany, 1 from tuberculosis, 2 from conditions which resemble slight symptoms of cachexia strumipriva, while of the other 18 who have remained well, at least in 7, if not in 9, 'recurrence' of the goître is said to have taken place. Yet all these cases are distinctly reported as instances of 'total' extirpation of the thyroid gland.^a Such statistics we must, I fear, accept with much reserve."

On the other hand, we have the statements of Profs. Kocher and Reverdin, the former of whom in 32 cases of total ablation and the latter in 18, observed myxœdema to occur in a very large proportion.

Under these circumstances every effort should and, doubtless, will be made to determine whether any other efficacious operative treatment, less hazardous as regards both immediate and remote unfavourable consequences, should not preferably be employed.

^a Clin. Soc. Trans. Vol. XXI. P. 151.

I am not sanguine enough to hope that this important question will ever be settled here, no surgeon in this country having a surgical material that is at all adequate for the purpose; but any clinical facts bearing on this question cannot be considered as devoid of interest and importance. Accordingly, I desire to draw attention, and will do so with all brevity, to some cases under my care in which enlargement of the thyroid gland was the subject of operation. The cases are seven in number, of which three were examples of unilateral and four of bilateral enlargement. In two cases of the former group the results of the operation were all that could be desired. In many respects, however, they differed materially from one another. One occurred in a female, aged thirty-two, who was operated on in the Richmond Hospital in 1880. The disease was an example of a cystic thyroid, and a large amount of calcareous deposit was contained in the tumour. The tumour was strongly encapsuled, and its removal was accomplished with comparative facility. The subsequent progress of the case, as far as I could trace it, was satisfactory. The second one was that of a girl, aged eleven, who was recommended to me by Dr. M'Dowel, of Sligo, in 1886. The case differed in every respect from the former. The right lobe was the one chiefly engaged; its base was broad and ill-defined at each side, and crossing it at its most prominent part were large veins—storm signals of the dangers and difficulties I felt sure I should have to encounter in my attempt to remove the tumour. These gloomy anticipations were fully realised, for the hæmorrhage was as excessive as in any case of the kind I have ever had or witnessed, and were it not for the timely assistance I had from my colleagues, Mr. Thomson and Mr. Thornley Stoker, the result might have been different. I commenced by making an incision, about three inches in length, over the tumour. One of the large veins crossing it was wounded while dividing the strong fascia covering it. Ultimately the hæmorrhage from this vessel was controlled by two clip forceps. The fascia was then detached at each side of the tumour chiefly by the finger, and an artery at the upper part of the tumour had to be ligatured, and another secured by forceps. I then freed the tumour from its attachments on the inside, and ultimately came down on the isthmus, which was, with much difficulty, isolated. At this stage of the operation the hæmorrhage was very alarming, for it is no exaggeration to say that everything that was touched appeared to bleed. I succeeded, however, in

passing an aneurysm needle around, with a double silk ligature round the isthmus, and divided it between them. The child then almost ceased to breathe; there was laryngeal stridor and the teeth were clenched, and she was pulseless. I was about to open the trachea when the spasm subsided immediately after a hypodermic injection of ether had been administered. I was then enabled to continue the operation; but before completing it and removing the tumour had to encounter hæmorrhage, which at times appeared quite uncontrollable. The wound was then dressed with boric acid and iodoform, and closed with numerous points of suture. The patient ultimately made an excellent recovery, nor has there since she left hospital been any evidence of the left lobe becoming engaged. The appearance of this patient previously and subsequent to the operation is faithfully represented in the accompanying lithographs, which are taken from photographs (Plate I.).

The third case occurred in a boy aged ten, the brother of the last patient, and operated on the year after the preceding one was dealt with. The case presented many striking features of similarity, as regards the size and consistence of the tumour, to his sister's. The result, however, was very different. It was, in fact, one of those painful and tragical events in surgery which everyone who considers himself competent to undertake operations of such magnitude must be prepared occasionally to encounter. After the removal of the tumour, which was attended with the usual difficulties and dangers consequent on the violent and uncontrollable hæmorrhage, the patient, notwithstanding all our efforts to save him, sank from exhaustion and died.

The details of the fourth case, which occurred in a female, aged eighteen, operated on in the Richmond Hospital, in which both lobes of the thyroid were engaged and removed in two separate operations, I have already published in the *British Medical Journal* in 1886, and therefore will not do more than state that three weeks after the removal of the second lobe she had a convulsive seizure characterised by clenching of the hands, dilatation of the pupils, slight stertorous breathing, eyes wide open and staring, frothy discharge from the mouth, and marked acceleration of the pulse. These symptoms lasted about a minute, and she then fell asleep. Shortly after this, puffy swellings appeared in the eyelids, on the back of the wrists, and over the metatarsus of both feet. There was much mental torpidity, indicated by the length of time

she took before answering a question, and great slowness of utterance. She complained, too, of occasional pains in the arms and legs. As the case progressed all these symptoms became intensified, the convulsive seizures recurred frequently and with an increasing intensity, the mental torpidity also became greater, as did also the pains in her extremities. She also got the vacuous semi-idiotic expression of face, so often observed in cases of myxœdema.

Ultimately the breathing became affected, apparently from the supervention of pulmonary infiltration, and the patient gradually sank from exhaustion three weeks after the removal of the second lobe of the gland. This case, which appears to be, from the acute course it ran, a unique one, is, I think, of special interest as clearly showing the relation between complete removal of the thyroid and the development of serious cerebral symptoms and myxœdema. Plate II. (frontispiece) is a representation of the patient before and after the first operation.

The fifth case was that of a female, aged twenty-five, who had a triple enlargement of the thyroid—two lateral lobes and a central one occupying the isthmus. She was operated on in the Richmond Hospital in 1884. The enlargement on the isthmus was the most prominent of the three, and was the only one I dealt with. It was about the size of a small Tangerine orange, and its removal was comparatively easy. After fully exposing the tumour by a vertical incision I passed strong silk ligatures round the portions of the gland connecting it with the two lateral lobes, and then dissected away the tumour, with, however, considerable difficulty. The interesting point connected with this case was the rapid diminution in size after the operation of the two remaining enlargements, nor was there any evidence of a recurrence of the enlargements when I saw the patient more than a year subsequently to the operation. After that I lost sight of her.

The sixth case was that of a youth, aged fifteen, on whom I operated in 1883. The enlargement was in this case not so great as in the others, but still large enough to give rise to marked deformity, and it was steadily increasing. I adopted in this case the treatment of ligature and removal of portion of the isthmus, as originally, I believe, recommended by Sir D. Gibb, and to which such an impulse has been given by Mr. Sydney Jones, and the result was very interesting—indeed surprising. The lateral enlargement shrank with a rapidity that was remarkable. Five

months after the patient left hospital I saw him again, and was glad to observe that there was no evidence of any return of the tumour.

The seventh case was that of a female, aged twenty-four, who was the subject of operation in the early part of last year in the Meath Hospital. The enlargement was well marked on both sides, but with very ill-defined limits, and appeared to be also to a certain extent substernal. These two circumstances were contra-indications to any extensive ablation of the tumour until, at all events, other and less hazardous methods of operative treatment had been tried. The patient was very urgent that something should be done in this direction, as the deformity was very great, and at times dyspnoea well marked. The case appeared to me to be peculiarly suited to the operation of ligature and removal of the isthmus, which I accordingly recommended. The operation, in which I was ably assisted by my colleagues, Mr. Smyly and Mr. Hepburn, was performed in a manner very similar to that mentioned in connection with the last case, but the result was somewhat different. Instead of the operation being followed by a shrinkage of both enlarged lateral lobes, the diminution which took place subsequently was confined to one side only—namely, the left—and here, when the patient left the hospital, was a deep hollow sulcus where, previously to the operation, existed the enlarged left lateral lobe. It is not easy to give an explanation of this, but the unilateral shrinkage, as a result of ligature and excision of the isthmus, is a deeply interesting, and I believe, a hitherto unnoticed clinical fact.

As regards details of the operation of excision, it is very doubtful to me as to whether, in the majority of cases, much value is to be attached to rules that have been laid down as to particular directions in which incisions are to be made, and the situation where the inferior thyroid artery is to be ligated, with a view of minimising the chance of involving the recurrent laryngeal nerve, although, no doubt, the desirability of ligaturing it as far as possible from the point where it enters the gland should ever be borne in mind. In certain cases, doubtless, when, owing to the tumour being well encapsuled, with distinct limitation, and not substernal, particular vessels can be isolated, easily recognised, and secured. But in the cases I have operated on, more particularly such as those illustrated in this paper, as well as in the cases recorded by Mr. Thornley Stoker and the late Dr. Corley—in which the hæmorrhage was as profuse

as it was continuous, the vessels of great calibre, with thinned walls, and bleeding fiercely without the slightest provocation—the inutility of any fixed and definite rules becomes apparent, and the surgeon can rely only on his own judgment, experience, skill, and patience.

The operation of ligature and excision of the isthmus consisted in making a vertical incision, about three inches in length, in the middle line, care being taken to avoid as much as possible wounding the transverse branches of the anterior jugular veins until they had first been secured by ligatures. On the isthmus being exposed it should be detached from the trachea, and in doing so Fergusson's blunt flat steel director will be found most useful. An aneurysm needle, carrying a double loop of carbolised silk or catgut, can then be used to secure the isthmus at its junction with the gland at either side; or, if apprehensions exist as to the liability of the ligature slipping off, the isthmus can be transfixed by the needle. On being firmly secured at either side it can then be either divided or excised.

In connection with this operation, I have recently had a communication from Mr. Sydney Jones, which contains several points of interest and practical importance. He observes:—"Where there has been distinct lateral pressure, either by a well-marked isthmus drawing together the lateral lobes, or where there is no evidence of isthmus, the enlarged lateral lobes pressing on each side of the trachea, I have never been satisfied with a simple division of it. Passing my finger beneath it—between it and the trachea—I have transfixed the right and left ends (at junction with the thyroid) with an aneurysm needle carrying a double thread, ligaturing as with an ovarian pedicle, and excising the bit between the ligatures. My object in all cases has been to make a wide groove between the two lateral lobes. Through this wide groove the threads may be passed to the lower part of the wound over the upper end of the sternum, and thus effectual drainage secured. I have found the trachea laterally compressed. The result of the operation has been diminution of the thyroid and relief of the symptoms. The risk of the operation does not seem much."

Another operation, having for its object the starvation and shrinkage of the tumour by ligature of the thyroid arteries, has been lately advocated by Prof. Wölfler, of Vienna. The results of the operation so far have not been very satisfactory, and further

experience would be required before definitely deciding on its merits.

When comparatively recently I brought the subject of operations on the thyroid before the Biological Club, I was asked by one of the members, after the communication was concluded, if I had ever operated on a case of exophthalmic goître. I replied that I had not, nor was I aware that it had ever been done. Since that, however, I have had an opportunity of seeing in the *Deutsche medizinische Wochenschrift*, the records of two cases operated on by Dr. Lemke, of Hamburg, and, it is stated, with good results. One of the cases was that of a boy, aged seventeen, who for two years had suffered from palpitation of the heart and shortness of breath. He then developed exophthalmos and goître, and suffered ultimately from such dyspnœa that laryngotomy was performed, and Kœnig's long cannula inserted into the trachea. Subsequently the left lobe of the thyroid was removed; the result was most successful. Seven months after, the enlarged right lobe had disappeared, as well as the exophthalmos and the cardiac disturbance. The second case was that of a male, aged forty-seven, in whom the symptoms and signs of Graves' disease were well marked. In this case operative interference was attended with equally good results. The right lobe was removed—an operation attended with great hæmorrhage—but the recovery was rapid, and in every way satisfactory.

Having regard to these cases, and the remarkable results obtained from ligature and excision of the isthmus, it is a matter worthy of consideration whether this latter and less hazardous operation might not be undertaken with a good prospect of success in exophthalmic goître.

When we consider the exceptional difficulties, dangers, and serious sequelæ that at times attend immediately or occur remotely after thyroidectomy, whether it be complete or partial, such as hæmorrhage, tracheal collapse, injury to the recurrent laryngeal nerve, tremors, convulsions, sudden dyspnœa, shock, septic infiltration, nerve degeneration at a situation remote from the field of operation, myxœdema and cretinism, it is remarkable that a method of procedure—namely, ligature and excision of the isthmus—that, so far as our experience goes, does not appear to be attended with the same risk, has not merited a greater attention at the hands of surgeons than it has hitherto done. I do not know of any case except those of Mr. Holthouse, who has narrated the particulars of two cases, Mr. Sydney Jones, who has had four alluded to by



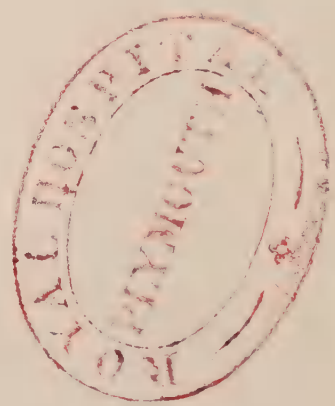
F. Huth, Lith. Edin.

Sir William Stokes on Operations on the Thyroid Gland.



F. Huth, Lith. Edin.

Sir William Stokes on Operations on the Thyroid Gland.



Sir William MacCormac in his able surgical address in Belfast in 1884, and my three cases. These are very few, but still the results are distinctly encouraging. Mr. Jacobson, in his excellent work on Operative Surgery, says:—"I would most strongly urge a further trial of this operation in cases of general enlargement of the gland, especially when the isthmus itself is enlarged." (P. 438).

Should the experience of surgeons in the future coincide with that which has been already acquired, limited though it be, a very great advance will be acknowledged to have taken place in the treatment of one of the most serious conditions that the operating surgeon may be called upon to deal with.

ART. II.—*The Significance of Cheyne-Stokes' Respiration as a Symptom in Cardiac Disease.*^a By M. A. BOYD, M.D.; Fellow, Royal College of Surgeons in Ireland; Member, Royal College of Physicians of Ireland; Physician, Mater Misericordiæ Hospital, Dublin.

THE ætiology of Cheyne-Stokes' respiration is still an unsettled point amongst both physiologists and pathologists, and though I cannot pretend to throw any new light on the phenomenon from the pathologists' point of view, there are still so many feasible theories offered as an explanation physiologically that I would venture to consider them in detail, as well as to offer some additional observations from a clinical point of view in explanation of the phenomenon.

Stokes, in 1846, while offering no explanation of the manner of its production, considered its presence pathognomonic of fatty degeneration of the heart. Subsequent *post-mortem* examinations by competent observers failed to confirm this, and it can no longer be considered a correct deduction. Though occasionally associated with fatty heart, other lesions of the valves or aorta have been found present, to which the fatty degeneration is only secondary.

Dr. Seaton Reid, in 1850, was the first to point out that fatty degeneration of the heart was not a necessary accompaniment, and he was also the first to point out the fact that the rate of the heart and pulse were in an inverse ratio to that of the respiration.

In 1867, Dr. Head brought forward a case in which no fatty degeneration existed; and Dr. Little, in 1868, read notes on three

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, May 22, 1891. [For the discussion on this paper, see page 79.]

cases observed by him, in which he offered an explanation for the production of this form of breathing. Hayden, in the same year, brought forward several other cases of this affection, in which the *post-mortem* evidences were in favour of disease and dilatation of the aorta, with and without valvular lesions, and hypertrophy of the left heart. The clinical features of all Hayden's cases differed considerably from those of other observers, as he decidedly states in his work, "*Diseases of the Heart and Aorta*," there was no change in the pulse or cardiac rhythm during the different phases of the ascending, descending, and apnoæal periods of the phenomenon.

Biot, of Lyons, in 1876, by a careful series of sphygmographic tracings of the pulse and respirations, shows this to be an error—Little in his cases, in 1868, having also alluded to this point. The balance of evidence is now in favour of this rhythmical irregularity of the heart and pulse during the different phases of the respiratory act; and several cases have come under my notice in all of which there could have been no doubt of this difference.

A case which came under my notice not long ago exhibited this peculiar difference in the pulse and cardiac rhythm in a marked degree, and several sphygmographic tracings of the pulse which I succeeded in taking illustrate it:—

CASE.—A clergyman, aged fifty-two, of stout build and florid complexion, came under my care on July 6th of last year, suffering from cardiac asthma, with swelling of the feet, high coloured urine—no albumen—cough and dyspnœa on exertion, with crepitus at base of lungs, and well-marked enlargement of the liver. Examination of the heart showed dilatation, with some hypertrophy of the left side; dilatation of right, accompanied by epigastric pulsation, and a systolic bruit over the aortic area only. The impulse was feeble, and the second sound not accentuated.

Patient's illness began in the spring of last year, when he got an attack of influenza then prevailing in his neighbourhood, and during the attack, and subsequent to it, his chest and breathing did not feel as usual. He tried to attend his duties in this condition till end of March, when he got a cold which confined him to bed. Recovering somewhat by the rest in bed, he began attending to duties again, but his breathing was now constantly troubling him when he made exertion, and in June he had to give up and go to bed. His breathing at this time was so bad as to oblige him to sleep in a chair on several nights, as he could not do so lying down. His family history was a bad one, as two of his sisters suffered from disease of the heart.

After coming under my care in July he improved somewhat on digitalis and saline purgatives. His dyspnœa, however, continued troublesome

on exertion, and frequently prevented sleep at night. His dropsy and hepatic enlargement showing no symptom of abatement, and the heart continuing to remain weak, in spite of treatment, patient was sent as a hopeless case to some friends to die.

The exertions of removal brought on such an attack of breathlessness and dyspnœa that the patient became unconscious, and when I saw him after arrival at his friends' place I thought him in a dying state. His face was livid, pulse almost imperceptible, and, though he could be roused to partial consciousness, took no notice of things about him. This condition lasted for three days, during which time nitrite of amyl with ammonia and digitalis were given, patient rallying to a more conscious condition, with difficulty of pronunciation when he spoke—almost amounting to aphasia—and some slight symptoms of hemiplegia of right arm. Now, for the first time, Cheyne-Stokes' respiration began to show itself—a complete pause in the respirations which lasted just ten seconds, during which time the patient seemed in a deep sleep or coma. Respirations would then commence, when the patient would rouse up, making a gradually increasing inspiratory effort, with a gradually shortening expiratory one, until a long, final, forced inspiration was reached and the chest filled. Then an almost imperceptible expiration would follow and the descent begin, the expirations gradually exceeding the inspirations till the chest was completely emptied and the pause began, during which pause there was complete cessation of all breathing. The pulse during all these phases showed a remarkable change in rhythm. At commencement of respiration it began to slow and continued to do so till the last violent inspiration was reached. It then began gradually to quicken as the expiratory efforts progressed, and continued to do so all through the pause till inspirations began again. The entire cycle lasted exactly thirty seconds, or two cycles in the minute. From the beginning of inspiration to its height lasted ten seconds, from the height to end of expirations lasted ten more, and the pause lasted an equal number.

So far as I am aware, no writer on the subject has drawn attention to the fact that, though the ascending portion of the respiratory effort is chiefly an inspiratory one, the descending is an expiratory one; and this latter has, in my opinion, a significance which I shall allude to later on.

The sphygmographic tracings of the pulse during the inspiratory period, the expiratory period, and the pause are here figured, and indicate that the ventricular contractions are slower and apparently stronger during the inspiratory period till the latter reaches its maximum at the final forced inspiration; it then shows a falling off in the slowness of its contractions—arterial tension, however, continuing high—and its beats becoming quicker and quicker until end of pause is reached, when, with the beginning of respiration, it becomes slower and stronger in its contractions again.

Nitrite of amyl in conjunction with digitalis, given in draught, certainly exercised a beneficial effect on the heart; and after two or three days of this treatment, the patient became more conscious, always experiencing a difficulty in pronouncing words, the hemiplegic symptoms being still present, and the Cheyne-Stokes' respiration remaining just the same. The consensus of opinion in favour of the view that this affection is due to deficiency of oxygen and increase of carbonic acid in the pulmonary circulation or system generally induced me to try the inhalation of oxygen as a remedy, and with the most marked benefit. After a few inhalations the dyspnœal period became shorter, and the patient was constantly calling for the inhaler, from the comfort it gave him. At the end of two days of the inhalations the Cheyne-Stokes' respiration had disappeared, the aphasic condition and hemiplegic symptoms disappearing with it, the dropsy and enlargement of the liver began to subside, and in ten days patient was up and convalescent. The heart, when I saw the patient some months later, was still weak and the systolic bruit still present over the aorta, but in other respects patient was quite free from all respiratory trouble.

I shall now allude to the different theories put forward to explain this peculiar respiratory phenomenon. Traube regards the symptom as due to a want of arterial blood in the respiratory centre, in consequence of which (respiration failing and carbonic acid accumulating in the lungs) the pneumogastric nerves, and subsequently the sentient nerves generally, are stimulated to inordinate action, and accelerated respiration is the result. But carbonic acid being rapidly eliminated under this increased activity of respiration, the peripheral sentient nerves, and then the pneumogastriks, are inadequately stimulated—hence a gradual subsidence of respiration and finally apnœa.

Filehne is of opinion that this symptom arises from a lowering of excitability in the respiratory nerve centre relatively to that of the vasomotor centre.

Dr. Little explains the phenomenon as due to inadequacy of compensation between the two ventricles, whereby a left ventricle, altered by the effects of either valvular or aortic disease in front of it, is no longer able to empty itself as quickly as it is filled from the lungs, and stasis of the blood takes place in the pulmonary capillaries, which, when fully charged with oxygen, fails to produce the stimulating effect on the pneumogastric which venous blood does, which stimulation excites the reflex act of breathing; breathing would therefore cease. Then, as the respiratory act assisted in carrying the blood towards the left side of the heart, it would no

longer be over-stimulated by fresh supplies, and its contractions would become less frequent and more regular. After discharging this its surplus supply, room would be made for a fresh quantity from the lungs, and also for the venous blood from the pulmonary artery and right side, to take the place of the large amount gone before; and forced inspirations would be necessary to aerate this large quantity, which forced inspirations would carry forward the large supply oxygenated by the lungs, and the deepest inspirations would follow when the largest quantity of venous and the smallest quantity of arterial blood lay in the lungs.

Hayden, in his work on "Diseases of the Heart and Aorta," considers it due to failure of the capillary circulation from want of the contributory aid rendered by the elastic recoil of the aorta when dilated or diseased producing a want of oxygen in the tissues, or deficiency of tissue respiration ("*besoin de respirer*"), with its result, spurious breathing; and as in proportion to the establishment of better capillary circulation by this forced breathing, dyspnœa becomes less urgent, and the descending or feeble respiration follows from exhaustion as the result of the previous forced inspirations. "That imperfect circulation of arterial blood in the respiratory centres," he adds, "contributes in a special manner and in a great degree to the production of the respiratory derangement, I have no doubt, but the effect of this is not easily distinguished from a want of oxygen in the tissues of the body generally."

Professor Laycock expressed the opinion that this phenomenon depends on a sentient palsy of the respiratory centre, or a paresis of reflex sensibility of the mucous membrane of the lung, that the slower breathing is due to the diminishing sensibility, and the accelerated breathing following the interval of apnœa is due to the stimulus of unaerated blood being hurried proportionately to the need of oxygen. It is, he thinks, a neurosis of the vagus not necessarily dependent on structural or other diseases of the heart, and most frequently occurs during sleep or at the moment of going to sleep, showing that the gradually-diminished motor activity is coincident with gradually-diminished sensory activity until the carbonised blood rouses up the sensory centre.

The phases of the respiratory phenomenon, as I observed them, were as follows:—

1st. An apnœal period characterised by deep sleep, lividity of face, quick pulse, feeble contractions of heart, perfect rest from all agitation mental and bodily.

2nd. An inspiratory period, with rousing of all the patient's faculties, extreme restlessness, slowing and strengthening of the pulse, apparently stronger contractions of the heart, less lividity of the face, and then a final deep inspiration.

3rd. An expiratory period, with inspirations gradually getting shorter and expirations longer, pulse getting quicker and heart feebler in its contractions till expirations cease and chest is empty, and restlessness gives place to sleep, which continues through apnoea following.

If we now examine for an explanation of this respiratory phenomenon—assuming it to be connected primarily with some defect in the heart, and excluding those cases of Cheyne-Stokes' respiration met with in cerebral disease or injury, where the functions of the respiratory centre are directly interfered with—it appears to me, looking at it from a cardiac point of view, the phenomenon is only an effort on the part of the higher automatic centres to rest a heart that is either too feeble to charge an arterial system the aorta of which may be dilated, or the vasomotor control of which may be defective, and whose own supply of blood may be rendered defective in consequence, and its nutrition enfeebled.

The phenomenon then comes to be explained on mere mechanical grounds.

During the apnoeal period the left heart is resting, contracting on small quantities of blood, and acting in this condition feebly and quickly, such as we see in conditions when it is dilated and feeble, as in cases of advanced valvular disease. At the same time the systemic veins are full from feeble *vis à tergo*, the brain and tissues filled with oxygenated blood from the previous forced expirations, and the lungs filling from the feeble right side with venous blood. This latter rouses the pneumogastric filaments, and forced inspirations begin, which forced inspirations bring oxygenated blood to the left side in large quantity, and the heart is roused to contract.

All physiologists are agreed the principal purpose of the forced inspiration is to powerfully draw the blood from the systemic veins to the right heart, and aerate what blood has accumulated in the lungs during the apnoeal period, when the right heart was contracting feebly; but it also has the effect of hurrying more blood into the left heart, and filling the left ventricle, the muscle of which begins to act more slowly, and to take a longer time to do so on its full contents. This apparent stronger contraction has not, however, the effect of filling the aorta sufficiently, as the sphygmograph

showed that the arterial tension was low, though the up stroke was higher. Then comes the significance of the forced expirations—a significance, so far as I can find in the literature of the subject, which has not heretofore been alluded to. They enable the feeble ventricles, with their already overcharged contents, to finally fill the lungs on one side and the aorta on the other, and to raise the tension in the arteries, as the tracing shows. In the apnœal period following, both ventricles are again resting until the stimulus of venous blood in the lungs rouses the pneumogastric and inhibits the respiratory centre. Landois, in his “Physiology,” says:—“During the great and forced inspiratory efforts, the heart is powerfully dilated, the elastic traction of the lungs act so as to dilate the cavities of the heart in the direction of the lungs, more blood flows into the right heart and much less blood is driven out of the left heart; hence this side of the heart is distended with blood, while the aortic system contains a small amount of blood. Then come the forced expiratory efforts, which have the effect of helping to empty the ventricles. The air in the lungs being under high pressure compresses the heart and fills the great vessels. No blood can pass into the thorax from without, hence the systemic veins are full, swell up, and become congested. Then comes the apnœal period, when the arterial system is full of oxygenated blood, and, the pneumogastric no longer stimulating the respiratory centre, breathing ceases.”

That apnœa can be produced by surcharging the blood with oxygen, any of you can prove experimentally on yourselves by taking rapid and deep inspirations, when an apnœal pause will follow.

As far as my experience goes, the cardiac conditions necessary for the production of this form of breathing are not alone dilatation of the aorta, as Hayden has pointed out, but also dilatation of the right ventricle, with beginning degeneration or weakness of its walls, also hypertrophy of left ventricle with or without dilatation, but with degeneration of its muscle or its dynamic contractile power enfeebled from any cause whereby it is unable to empty its contents into a dilated and inelastic aorta.

It may occur to many of you that this condition of the heart is frequently met with in many cases of valvular disease accompanied by atheroma of the arteries, and only produces dyspnœa. Why, then, should not Cheyne-Stokes' respiration occur in all such cases where these conditions exist?

The difference, in my mind, is only one of degree; and any attack of cardiac dyspnœa produced by such alterations in the heart and aorta may become Cheyne-Stokes' dyspnœa when any additional strain is put on it, so as to still further enfeeble its action and cause interference with the supply of arterialised blood to the respiratory centre. The affection is, in fact, cardiac dyspnœa plus poisoning, or starvation of the respiratory centre.

That poisoning or interference with the nutrition of the respiratory centre in the medulla is a necessary accompaniment of any alteration in the heart leading to Cheyne-Stokes' respiration, must now be considered proved; and that poisoning of this centre or interference with its blood supply by disease or injury may produce Cheyne-Stokes' respiration *per se* without any heart disease, the observations of von Dutch in 1867 go to prove, as he described cases of this form of respiration occurring in association with apoplexy, meningitis, and uræmic coma; and Broadbent confirms these assertions in 1877 by illustrative cases.

Now, all observers agree that the Cheyne-Stokes' respiration may accompany cerebral disease, as well as coma depending on either uræmia or apoplexy, with or without cardiac engagement.

My experience of the good effects of the inhalation of oxygen in Cheyne-Stokes' respiration has convinced me that it not only keeps the respiratory centre in a condition of stable equilibrium, but it does so by supplying oxygenated blood to the heart itself, and thereby improves the nutrition and muscular contractions of that organ.

The rapid disappearance of the dropsy and dyspnœa in the typical case I have alluded to, as well as others treated similarly, would encourage me to suggest its employment in other cases of degeneration of the heart as a remedy worthy of trial.

ART. III.—*On the Treatment of Chronic Eczema by Creolin.*^a By R. GLASGOW PATTESON, M.B., Univ. Dubl.; Fellow and Member of the Court of Examiners, Royal College of Surgeons in Ireland; Surgeon in charge of Skin Department, St. Vincent's Hospital.

THE value of tarry preparations in many forms of skin disease—especially psoriasis and eczema—has long been recognised. “If I were required to name one remedy only for eczema,” writes Mr.

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, May 22, 1891. [For the discussion on this paper see page 79.]

Jonathan Hutchinson, "I would chose tar; if allowed to chose two, tar and lead; and if three, tar, lead, and mercury;" adding his "belief that tar is the specific for all forms of true eczematous inflammation of the skin."^a The form in which he uses it, is the alkaline solution of coal-tar known as "Liquor Carbonis Detergens"—a teaspoonful to a pint of warm water. The cost of this preparation debars its use in out-patient practice, and it was the cheapness of creolin and its excellent antiseptic properties that induced me a year ago to try its effects in the treatment of chronic eczema. A short experience satisfied me that the most useful strength was that of one drachm of creolin to eight ounces of water—roughly speaking, a tea-spoonful to half a pint of water. In this proportion, from which I have never varied, it forms a bland and soothing emulsion, milky in appearance, and with a strong tarry odour, which has a marked effect in allaying irritability and itching, prevents the formation of scabs and crusts, and appears in a striking manner to moderate the pus-producing activity of certain forms of eczema. The mode of applying it which I have found most efficacious is the following, which though applicable in the majority of instances, must yet, like every other remedy, be modified to meet individual cases.

The parts affected, having been freed from crusts or other accumulations, by appropriate means, should be freely bathed in the freshly-prepared emulsion for from ten to fifteen minutes. If the disease is in the acute stage, or if there is much secretion, lint soaked in the liquid may be applied over all parts, and retained in place by suitable dressings. But if the eczema is of the squamous type, treatment in the intervals is best carried out by means of ointments—that which has yielded in my hands the best results being one composed of zinc oxide, white precipitate, and the glycerine of the subacetate of lead. Under this treatment recent cases recover with astonishing rapidity, and even cases of long standing soon show signs of improvement which, in the majority of instances, goes on to complete and permanent recovery. In only a few instances has it failed to do more than alleviate the condition.

CASE I.—The first case in which I put the remedy to the test was that of a boy, aged nine, who had suffered for eight years from pustular eczema of the scalp. The whole surface was of a bright red colour, in parts covered with yellow crusts, in parts sodden and infiltrated with a semi-purulent

^a Archives of Surgery. Vol. I. No. 2. Oct., 1889.

fluid, which exuded freely on pressure. The crusts were removed, and soothing lotions applied until the acuteness of the outbreak had subsided, but as soon as a quiescent stage was reached the creolin treatment was begun with striking benefit. Patches of healthy skin immediately became apparent, and in a short time covered with hair, where seemingly beforehand not a trace of the hair follicles could be expected to remain. With occasional relapses the treatment was persisted in for nearly six months, when the hair was growing freely over all the head, except on the forehead in one or two small patches; the scalp was normal in colour and in firmness, and the tendency to pus formation had apparently ceased. The boy was practically well, and as he has not returned for a period of over two months for treatment, we may assume that the improvement continues, though of course in an affection like eczema it is still too soon to speak of a permanent cure.

CASE II.—The second case was that of a boy aged five, who had been the victim of a similar affection for three years, the pustular crusts completely surrounding the ears on either side. A similar line of treatment, combined with the ointment referred to above, effected a speedy and complete recovery without a solitary relapse, and now four months afterwards there is no recurrence.

I have since tried the remedy in cases of scaly eczema and psoriasis with marked relief to the irritability and itching, but it is still too soon to form any judgment as to its curative powers. But in the infective pustular eczema it is an agent that effectually controls the process, and well deserves a trial on a larger scale. If we accept Unna's definition of eczema as "a chronic parasitic catarrh of the skin, with desquamation, itching, and the disposition to respond to irritation by exudation and well-marked inflammation,"^a then we have a rational basis on which to ground our treatment by such an active germicide as creolin.

ART. IV.—*Suggestive Therapeutics.* By GEORGE FOY, F.R.C.S.I.; Surgeon, Whitworth Hospital, Drumcondra.

ONCE more an old friend, Mesmerism, claims a hearing, and, as is his wont, he assumes an *alias*. Scouted as Mesmerism, he appeals to the emotional as Braidism, finds no favour, crosses the Atlantic, returning as Electro-biology, and for a time lives a sort of Jeremy Diddler life, assuming airs of prosperity even on the verge of failure. Clad in Greek raiment, and with a certain air of mystery

^a Brit. Journ. of Dermatology. Vol. II. No. 8. Aug., 1890. P. 243.

in his bearing—in fact, respectable—he once more claims our good opinion. Nothing has done this old friend, Mesmerism, so much good as his re-baptism and his Greek name. He looks quite respectable, and it seems hard to refuse the hand of friendship to one who comes bearing—as he says—precious gifts. But as we look at him we think of poor Moses Primrose in the fair, and the pious, devotional old gentleman whose thoughts were not mundane, but who, nevertheless, was a horse-jobber.

These journeyings to and fro, and many *aliases*, recall Fielding's description of how Julian the Apostate gained heaven. Again and again rejected on reaching the gate of Paradise, he, nothing discouraged, reapplied, assuming all manner of characters, until he was finally admitted.

As I read the many volumes on suggestive therapeutics—professional and popular—that are on the market, my mind insensibly recalls the old sensational scenes of Mesmer in Paris, Graham in London, and Grimes in New Orleans. Indeed the vision may stretch back through the whole mediæval period, and call up suggestive therapeutics in full swing, too often assisted by its twin-brother, suggestive deviltry.

For those who would like to know to what we should come by our acceptance of the theory of treatment by suggestion, there is an abundance of literature—folios and quartos, piles of dust-covered books that record in every European language the crimes, hideous, horrible crimes, that resulted from suggestion. Then, as now, we had suggestive therapeutics performing its miracles, and then, as now, the miracles were performed on the weak-minded and emotional. The hypnotisers from the mediæval period to the present day work their spells on the most worthless members of society, and perform their miracles in out-of-the-way spots—the holes and corners of the earth.

The only really useful application of suggestion of which I am aware, is that of William the Third in Holland, who, on the occasion of an epidemic amongst his troops gave out that he had an infallible remedy against the sickness, and then with marked success had some coloured water distributed amongst them. We may admit that those to whose recovery a raising of their spirits was necessary were benefited by this course.

Two things and two things only, are required for the success of suggestion—an unbounded faith in the person seeking relief, and an unbounded assurance in the person conferring the benefit.

The assurance or confidence in the hypnotiser may arise from a belief in his own power, or from an intimate knowledge of the weakness of human nature. Both characters are familiar to every reader, and one of the great risks of hypnotism being applied to evil purposes in the future as it has been in the past, is the fact that any audacious knave can practise it on the weak-minded, and its propagation offers a fresh field for the plunder of the most defenceless individuals.

Even those who exercise the hypnotic power from the most worthy motives, do, by its very exercise, create victims for the designing knave. Nothing in the printed accounts is more startling and painful than the obliteration of the will-power of the victim of hypnotism. No more derogatory conduct is recorded, as far as I know, in the history of medicine than Dr. von Krafft-Ebing reports of his hypnotic experiments on his patient. Whatever little intelligence she had when she first was submitted to hypnotism, was destroyed by the suggestive therapeutics.

It may be answered that Dr. Krafft-Ebing's patient is a particularly bad case. I do not deny the fact; were there many such public indignation would quickly terminate suggestive therapeutics.

Krafft-Ebing rested satisfied with suggesting to the poor imbecile to do absurd acts—very absurd ones—but in the mediæval period fanatics suggested to decrepit men and women to own to witchcraft, to assert that they “rode o’ nights i’ the air.” The victim to-day confesses to being hot or cold as desired; in the past the victims confessed to succubus and incubus. Are we prepared to glide back to the superstition, cruelty, and ignorance of the fourteenth century?

Let those who may think that I exaggerate the evil, read the experiments of Liégeois, made in presence of officers of the law, by hypnotic and post-hypnotic suggestion, and even by suggestion in the waking state. He made a girl fire a revolver which she thought was loaded at her mother, and put arsenic into the drink of a relation. Can this girl's mind be said to be normal? What crime would she not have perpetrated on suggestion? Would she have hesitated to declare that she saw visions, “rode i’ the air” associated with an incubus, met at a witches’ sabbath, and there fed on infants’ flesh?

Are the doubtful advantages of hypnotism worth the recognised risks it incurs? Are the moral reforms that its professors claim

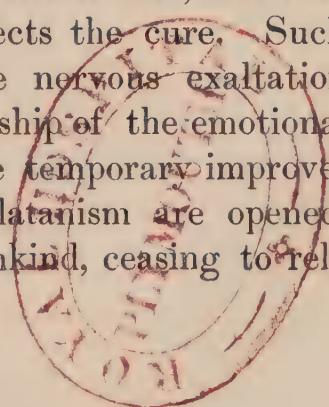
to have effected, at all equal to the demoralisation it has unquestionably produced?

To urge the acceptance of hypnotism, or suggestive therapeutics, because some thousands derived benefit from the method in France, is to ignore the teaching of the past, and to refuse to take experience as a guide.

In Nancy they find that 90 per cent. of the patients are amenable to treatment by this method; but 10 per cent. of unbelievers is a very large percentage to find at a shrine. Let there be a thaumaturgist anywhere, and those only who have faith will travel to him. How great must be the disappointment to the 10 per cent. of believers, strong in the faith, who have travelled a long journey at considerable expense, to find there is no hope for them.

That crowds attend is but natural. Crowds believed in the possession of the Divine gift of healing by the profligate Charles the Second, and his efficiency as a healer was testified to by nobles and bishops. Even the sagacious Wiseman, the father of English surgery, was infected by his surroundings, and believed in the thaumaturgic power of the royal touch.

To recall these superstitions serves several purposes; amongst others, it exhibits a psychological experiment on a large scale, and one which was oft repeated. That benefit in many cases resulted from one and all of these superstitious practices cannot be questioned. A multitude buoyed up with hope, confirmed in their faith by the presence and stories of their fellow-pilgrims, are in the best possible condition for benefiting by medicine or advice. The hysterical, hypochondrical, and the melancholic would especially be influenced by such surroundings. It is needless to tell how much all the functions of life are influenced by good or bad news, and for the suffering patient to see the crowds coming from distant quarters to the same shrine, all repeating the stories of successes that led them to start on the journey, is to create and foster that strong faith in him, and that joyous buoyancy of spirit that of itself effects the cure. Such cures are, however, never permanent. The nervous exaltation passes away when the stimulus of companionship of the emotional crowd is removed. And at what a cost is the temporary improvement purchased! The flood-gates of charlatanism are opened, medicine is retarded in its progress, and mankind, ceasing to rely



on observation, experience, and reason, rush to the supernatural. Miracles now replace cures, reason is dethroned, the multitude becomes a mass of knaves and dupes.

The scenes that the pen of Dumas describes at the tomb of Deacon Paris are liable to be re-enacted. And when the advocates of "suggestion" tell us that hundreds are cured by their method, that the cures are authenticated, that the method should find a recognised place in the art of medicine, I ask in what way does it differ from "mesmerism," or in what particular do the cures differ from the miracles of François Paris. Miracles performed daily for years, and authenticated even by the king himself.

But the story is best told in Dumas' words:—

"The reputation of Deacon Paris for sanctity was great. For a long time there had been no miracles, and people thought that after the dissolute times through which men had passed, a few miracles would not appear unseasonable. Four days after the burial of Deacon Paris miracles began upon his tomb. It was first a man, Lero, who came crippled into the cemetery of St. Médard, where the blessed Paris was buried, and he came out sound in limb, leaving his crutches on the tomb of the saint. This tomb, formed of a large stone raised a foot high from the ground, was the ordinary theatre of the pious evolutions of the Saint's adorers.

"From morning until evening the said stone was besieged by a crowd, which continuously grew, which came from twenty leagues around to see it, to touch it, to kiss it. The sick lay on it, and they immediately feel themselves seized by a nervous trembling, which often degenerated into convulsions. Hence arose the name of 'Convulsionaries' given by the people to the sectaries of the Deacon Paris.

"Some writhed themselves, rolled themselves in every posture, like epileptics; others shook and trembled, leaped and pranced, like those who were formerly said to be attacked by shivers of St. Vitus.

"Women naturally furnished the first actors in this strange comedy, which was played uninterruptedly for five years and one half in the enclosure of the little cemetery of St. Médard. There were at first six or eight hysterical girls whom a priest of Troyes, named Vaillant, excited by his mystic preachings; four months had not passed before the work of the 'Convulsions' counted six hundred adherents, men and women. One miracle done, ten others, twenty

others, produced themselves on the same scene, before the eyes of a public prepared to believe everything, and to submit nothing to the judgment of reason.

“Each miracle raised a cry of surprise and enthusiasm, which inspired faith in all hearts. The lame walk, the blind see, the deaf hear, the dying revive, and there are twenty witnesses, lawyers and physicians, who draw up a legal statement of each miraculous *séance*. Among these witnesses, whether partial or convinced, is found a counsellor of Paris, Louis Baple Carré de Montgeron, whose entire life was henceforth to be consecrated to the glorification of the miracles of the blessed Deacon. Among the active coryphæi of the ‘Convulsionary’ sect is found an illustrious tactician, a tried man of war, Chevalier de Holard, the learned commentator of Polybius. The spectacle of the supernatural movements caused by the grace of the Saint must have been a singular one; so, Parisian curiosity was excited to highest degree, and they went to walk in the cemetery of Médard, which was too small to hold the actors and the audience. The faith besides made astonishing progress, they sold earth religiously gathered round the tomb.”

During this ecstatic state the worshippers at the tomb became anæsthetised. They submitted themselves to dreadful tortures without murmur. Women twisted off their nipples, and pressed their breasts between wooden boards, men and women beat each other with wooden billets—indeed they added the word *bûcher* to popular language. Some went so far in their religious enthusiasm as to have themselves nailed to a cross. Their religious excitement was as powerful an anæsthetic as chloroform; yet I do not think physicians would be justified in producing a religious monomania to relieve pain, or as a substitute for chloroformisation.

Sieur Carré de Montgeron, who had been very edified by the convulsions and the miracles worked at the Deacon’s tomb, composed a large volume in quarto, ornamented with engravings under the title: “The Truth of the Miracles Wrought by the Intercession of the blessed Paris.” He gave the facts he had witnessed, and joined to his recital the certificates of the doctors and other justificatory documents. Copies of the book were sent to the King, to the Duke of Orleans, to the First President, and many others.

The scenes at the tomb of the Deacon Paris, however, increased in violence, crowds fought for standing-room in the cemetery.

Men and women became delirious with joy by the tomb, cures increased beyond count. The sight of the cemetery gave strength to the palsied limbs, drove pains from the body, replaced diseased viscera with healthy ones. Patients eat the earth off the tomb, and rubbed their naked bodies with soil from the cemetery. The Court became alarmed; a few miracles was all very well, and might be contemplated with gratitude, but the inexhaustible supply of healing virtue was too much for the age, and Louis wisely decided that a small percentage of cripples and a few cases of bronchitis amongst the people was better than a kingdom of lunatics. Hence the inscription on the cemetery gate, "*De par le roi defense à Dieu de faire miracle en ce lieu.*"

Cures even more directly following from "Suggestion" were those of Prince Alexander Leopold Franz Emmerich Hohenlohe-Waldenburg-Schillingsfürst, Bishop of Sardica, Hungary, who was the son of an Austrian general. He was admitted into holy orders at Olmutz in 1815, and in June, 1817, was nominated by the King of Bavaria, Supernumerary Councillor of the Grand Vicarage of the Bishop of Bamberg.

Whilst engaged in his pastoral duties he made the acquaintance of a Badenese peasant, who laid claims to the gift of healing, and in time he impressed the Prince that he possessed a like gift. His Highness became so convinced of the reality of the gift that he determined to put his powers to the test, and on the 20th of June, 1820, he made his first appearance in his character as a "Healer" by suggestion. As he had been infected by the Badenese peasant, so it appears he infected his valet, one Michael Martin, who, whilst his master rested, bestowed health and long life on the afflicted multitudes.

For the space of twenty-nine months the Prince-Bishop, fully convinced of the efficacy of the method he adopted, travelled through Germany in company with Michael Martin. Credulous beyond the common, he accepted all stories, and suffered both in pocket and reputation until the Burgomaster of Bamberg made some startling exposures of imposition, after which Prince-Bishop Hohenlohe abandoned his pretensions to the gift of healing.

We possess a graphic account of the method of cure from the pen of Dr. Arthur Jacob, of this city, which I recommend my reader to peruse, and from Dr. C. Pfeufer, Superintending Physician to the General Hospital, Bamberg. Under the Prince-

Bishop's care the deaf heard, the blind saw, and the paralytic walked.

The Prince commenced his operations by demanding of the patient, "Do you believe firmly that God will succour you, and that He can do so?" After the answer the Prince repeats either mentally or aloud a prayer for the patient's recovery. This action terminates in a benediction, and immediately after the patient is asked if he is relieved. Then the command of the Prince to the patient to rise from his bed and go about his duties is given, and the patient departs cured.

The process became too slow for the impatient crowds that surrounded the episcopal palace, and the Bishop made the happy discovery that the blessing and command could be given to multitudes at the same time, and as the numbers increased so did the efficacy of the method. At first none but true Christians felt the healing grace, but in time, like God's sunlight, it fell both on the just and the unjust. Jews, Turks, heretics and infidels benefited. Finally, Prince Hohenlohe was restrained from performing any more miracles. Restrained, however, only nominally, for the crowds continued to come, and refused to disperse until they had received the gift of health.

Private buildings became too small for the audiences of the sick and infirm. Theatres and town halls were thrown open to the multitude that thronged the cities where the Bishop was—"Neither silence nor order was preserved; often the Prince was interrupted in his operations by the boisterous approach of the infirm and the curious, and sometimes he grew angry; the attempts were made without pomp, without mystical evolutions, without any particular arrangements. The Prince infused so much warmth, zeal, and confidence, that the intensity of the interest increased at every word he pronounced."

"The impressions differed in their appearance according to the individual. Many of them assured us they felt as if a warm vapour spread itself through their system during the prayer; others asserted that they experienced tinglings and buzzings in the ears; some lost the use of their senses—many became cold and lost all sensation; but the greatest number were affected with palpitation of the heart. A paralytic patient, who was in the hospital, and who received the benediction two days in succession, thought he should have died in the struggle, and nothing could induce him to submit

to a third trial; while, on the contrary, he supported the application of the red hot iron twice in the mouth with singular fortitude. Almost all the patients agreed in saying that they believed, that during the prayer, their sufferings were altogether removed, or at least much diminished, so that in general they departed in great emotion, and with the deepest feeling of gratitude from the place where they had received relief for the first time during a long series of years."

Amongst the authenticated cures of the Prince, the following are the more interesting ones:—

"Councillor J—— has been for a long time tormented by a stiffness of his lower extremities, which, without however depriving him altogether of the power of moving them, yet renders the motion very circumscribed and painful. He has been twice already paralytic of the left side, of which he has been cured by the uninterrupted use of medicine. His power of motion was so limited when he put himself into the hands of the Prince, that he could not move a single step without assistance, but with this aid he walked so well a few days before that I urged him to attempt a short walk abroad. The patient waited with impatience for the arrival of the Prince, who was then at Würzburg; at length he arrived, and the same day, at nine in the evening, commenced his operations, which produced no sensible effect. The patient consoled himself in receiving the assurance that the attempt should be repeated on the following day, after he had prepared himself by receiving the Sacrament. It took place accordingly; the Prince commanded him to rise and walk without support. After some hesitation, and aided at first by the hand of the Prince, he advanced towards the door, then descended without assistance a staircase of fourteen steps, and re-ascended after a few seconds. The following day he came to me (Dr. C. Pfeufer) full of joy, assuring me that he would henceforth walk many times a day in his chamber, which no earthly power could induce him to do before. But on the third day he could not walk without support, and the right leg became swelled in consequence of the efforts he had made. He is now in such a condition as to compel him to have recourse again to medicine.

"Anne G——, aged thirty-nine years, unmarried, has for fourteen years laboured under an affection of her heart, to which has been added for several years paralysis of the left side, so that

for six years she could neither get up nor lie down without assistance. During the prayer of the Prince she declared to the Commissioners who examined her, she thought she felt the pains of the paralysed limb diminish, and the strength of her limbs increase. She was enabled to raise herself in bed, with the assistance of the Prince, who gave her his hand. The gentle extension of the tendons of the left foot, previously contracted, caused a delicious sensation, and her joy set her beside herself. Her limbs certainly trembled under her as she walked, because she had not used them for many years; she was, nevertheless, able to walk along and across her chamber, holding the Prince by the hand. The next day she again succeeded in her attempt to walk, and felt herself as strong as at first; but after some days she fell into her former state, and is now unable to quit her bed.

“Margaret G——, sister of the last, and also unmarried, has for nine years experienced periodical attacks of epilepsy. The paroxysms cease generally for nine days, after which they return for five days in succession, and occur many times in twenty-four hours. The Prince undertook this case also. According to this patient's declaration, during and after the prayer, she felt her strength increase, and she experienced extraordinary emotions; she was enabled to quit her bed instantly, to walk about the room holding the Prince's hand, to go to a window that looked into the street, and to remain an entire hour out of bed. The salutary effects manifested themselves principally in the left arm, which, paralysed for nine years, acquired sufficient strength to enable her to move it in every direction before the Commissioners, and to use it in holding solid bodies. Nevertheless, the Commissioners observed that it was weaker than the other, and sensibly emaciated. The joy of the patient was not of long duration. The day upon which the Prince operated was one of ordinary remission from disease, and the access of epilepsy was not expected until the following day; it manifested itself unequivocally, though in a very slight degree. The patient found herself very unwell during all that day; the following evening the paroxysm returned with more intensity than usual, and in a few days she relapsed into her former condition.

“Agatha L——, aged thirty-four years, unmarried, for many years laboured under a uterine disease. This affection is accompanied by pains in the belly, which she can only relieve by keeping the

left leg drawn up, which has compelled her to keep her bed for several years. After the prayer she stretched out the leg with pain, and felt as if she was enabled to move the upper part of her trunk and the arms. The prayer being repeated three times, she experienced an inexpressible sensation all over the body, collected her strength, and got out of bed without regard to the violence of the pain. After having been for about a minute supported by the Prince, she walked alone by his direction to the centre of the chamber, knelt down and returned thanks to God in a loud voice for her cure, and required very little assistance in rising. Nevertheless, the walking had increased the pains of the belly in an extraordinary degree; the left leg, formerly drawn up to the belly, certainly remained extended, but the patient preferred drawing it up, because its extension caused pain in an extraordinary degree."

"Barbara L——, aged twenty-nine years, herb woman, was admitted April 29, 1821, into the hospital of Bamberg for a pain in the hip. The actual cautery was applied the 28th of May, after the ineffectual employment of many other means. The result of this application was that the contracted member recovered its original dimensions and mobility. Fifteen days before she was submitted to the Prince's experiments the patient walked through the ward without crutches, and remained out of bed the greater part of the day; two days before she had even been in the garden. I should have said that she laboured under sclerosis with general emaciation, which was the only reason for detaining her in the hospital, she being obliged, among other things, to take chalybeate waters. At the request of the almoner of the hospital, an old Franciscan, the Prince proceeded to the ward where this patient was, and submitted her to trial; after which, by his command, she ascended from the ward to the first lobby and descended again, asserting that she did not perceive the slightest pain, although she had just before complained that she still experienced distressing sensations."

The author observes:—"The woman just mentioned had already been cured of her complaint, except some slight pain in walking. The Prince undertook the cure at the request of the almoner of the hospital. After the prayer she ascended and descended a staircase of several steps to the great astonishment of all those who knew not the particulars of the case, and who hastened into the street to announce the miracle; for an example so striking was much wished for, performed in a hospital where everyone

could be acquainted with the circumstances, to prove that the Prince really possessed the power of healing. The girl, as she told me, and repeated before several witnesses, experienced violent pains in the affected limbs in ascending the stairs; but she had not the courage to declare this at the time, and still less to disobey the orders of the Prince. Unluckily she was punished for her timidity, for the next day she could not move her thigh, and for many nights was deprived of rest. Moreover, erysipelatous inflammation appeared on the inside of the limb, accompanied by a painful swelling, which required much care and long-continued treatment to dissipate it. It was only at the end of three weeks that the patient was enabled to leave the hospital perfectly cured."

One of the most referred-to of the miraculous cures effected by the Prince was that of a hussar, who was deaf of both ears, and incapacitated on that account from duty. The Prince restored to him the power of hearing, and the man was enabled to resume his duties. As Dr. Pfeufer gives no particulars of the case, no conclusions can be drawn from it.

I have given the Prince's cases as reported, for they have long been recognised as having an important bearing on hypnotism—notably so by Mr. James Braid, to whom we are indebted for the re-baptism of mesmerism, and its introduction to respectable society.

Firmly believing that he possessed the gift of healing by prayer and suggestion, Prince Hohenlohe, from the most humane motives, devoted himself to succouring the afflicted; however much his conduct may be regretted, his life will ever command respect.

The Rev. Cotton Mather, D.D., who in 1691 commenced his mission to free the Commonwealth of Massachusetts, likewise used suggestion. His methods were the same as those practised by all similar persons—he excited enthusiasm on a distinct issue, he promised certain results, he excluded, by his fervour, all corrective ideas from the minds of his audience, and he suggested certain acts to those who had submitted their reason to his will.

Lest I might be thought to exaggerate the mischief the Rev. Doctor wrought, I give Bancroft's sketch of the man, his persecutions, and his cruel suggestions. The Council of the Commonwealth had been changed, many new members were added by Increase Mather, to whom the nomination had been entrusted by the Crown. But Increase Mather, instead of exercising his own judgment, made the majority of the appointments at the suggestion

of his son, the Rev. Doctor Cotton Mather, who now, delighted that the Council contained so many Christian men after his own heart, breaks out into expressions of delight:—" 'The time for favour is come,' exulted Cotton Mather; 'yea, the set time is come.' " . . . "And uttering a midnight cry, he wrestled with God to awaken the churches to some remarkable thing. A religious excitement was resolved on—"I obtained of the Lord that He would use me," says the infatuated man, 'to be a herald of His kingdom now approaching;' and in the gloom of winter, among a people desponding at the loss of their old liberties and their ill-success against Quebec, the wildest imaginations might prevail. Rebellion, it was said, is as the sin of witchcraft; and Cotton Mather, in his discourse, did but repeat the old tale, 'Rebellion is the Achan, the trouble of us all.' "

In Salem Village there had been bitter strife between the minister, Samuel Parris, and a part of his congregation. "In the family of Samuel Parris, his daughter, a child of nine years, and his niece, a girl of less than twelve, began to have strange caprices. 'He that will read Cotton Mather's Book of Memorable Providences may read part of what these children suffered,' and Tituba, an Indian female servant, who had practised some wild incantations, being betrayed by her husband, was scourged by Parris, her master, into confessing herself a witch. The ministers of the neighbourhood held at the afflicted house a day of fasting and prayer, and the little children became the most conspicuous personages in Salem. Of a sudden the opportunity of fame, of which the love is not the exclusive infirmity of noble minds, was placed within the reach of persons of the coarsest mould, and the ambition of notoriety recruited the little company of the possessed. There existed no motive to hang Tituba; she was saved as a living witness to the reality of witchcraft, and Sarah Good, a poor woman of a melancholic temperament, was the first person selected for accusation. Cotton Mather, who had placed witches 'among the poor, and vile, and ragged beggars upon earth,' and had staked his own reputation for veracity on the reality of witchcraft, prayed 'for a good issue.' As the affair proceeded, and the accounts of the witnesses appeared as if taken from his own writings, his boundless vanity gloried in 'the assault of the evil angels upon the country, as a particular defiance unto himself.' Yet the delusion, but for Parris, would have languished. Of his own niece, the girl of eleven years of age, he demanded the names of the devil's instruments who bewitched the

land of the 'afflicted,' and then became at once informer and witness."

Parris filling his prayers with the theme, made the pulpit ring with it. "Have not I chosen you twelve," such was his text, "and one of you is a devil." Accusations multiplied; all who had offended Parris were in prison for the crime of witchcraft. And other ministers, following the example set, quieted all opposition to their views by the same accusation. At first many stoutly denied the sin, and at the earlier meetings declared their innocence; but the pious clergy of Salem were not going to allow rebellion against their authority to make headway, so they erected the gallows, "not for those who professed themselves witches, but for those who rebuked the delusion." They called on the Governor of the Commonwealth to order the hanging of the wretches who denied their guilt, and produced witnesses from amongst themselves who vouched that the prisoners, for the accused had been thrown into prison, attended witches' sabbaths, and had familiar spirits—succubi and incubi. Their religious fervour would allow of no delay; the Governor was denounced as protecting rebels against God and religion. But old Simon Bradstreet turned a deaf ear to the pleadings for vengeance, and for a time stayed the harvest of death.

The victory of Mather and the clergy was, however, only postponed. On Saturday, the 14th of May, 1692, the new charter and the Royal Governor arrived in Boston. On the next Monday the charter was published, and the parishioners of Cotton Mather, with the Royal Council, were installed in office. The triumph of Cotton Mather was perfect. Immediately a Court of Oyer and Terminer was instituted by ordinance, and on the 2nd of June the Court was in session at Salem, making its first experiment on Bridget Bishop, a poor and friendless old woman. "The fact of the witchcraft was assumed as notorious, to fix it on the prisoner. Samuel Parris, who had examined her before her commitment, was the principal witness to her power of inflicting torture; he had seen it exercised. Deliverance Hobbs had been whipped with iron rods by her spectre; neighbours who had quarrelled with her were willing to lay their little ills to her charge; the poor creature had a preternatural excrescence in her flesh. 'She gave a look towards the great and spacious meeting-house of Salem'—it is Cotton Mather who records this—'and immediately a demon, invisibly entering the house, tore down a part of it.' She was a witch by

the precedents of Keeble and Sir Mathew Hall, of Perkins and Bernard, of Baxter and Cotton Mather; and on the 10th of June, protesting her innocence, she was hanged."

But no blame rests on the citizens of Massachusetts; all the officers of their Courts were nominated by the Crown, and the Governor and Council turned to the ministers of Boston and Charlestown for directions:—"and from them, by the hand of Cotton Mather, they receive gratitude for their sedulous endeavours to defeat the abominable witchcrafts; prayer that the discovery may be perfected; a caution against haste and spectral evidence; a hint to affront the devil and give him the lie, by condemning more on his testimony alone; while the direful advice is added, 'We recommend the speedy and vigorous prosecution of such as have rendered themselves obnoxious.'"

"The obedient Court, at its next session, condemned five women, all of blameless lives—all declaring their innocence. Four were convicted easily enough; Rebecca Nurse was at first acquitted—'the honoured Court was pleased to object against the verdict,' and as she had said of the confessing witnesses, 'they used to come among us'—meaning that they had been prisoners together—Stoughton (a creature of Mather's) interpreted the words as of a witch festival. The jury withdrew, and could as yet not agree; but as the prisoner—who was hard of hearing and full of grief—made no explanation, they no longer refused to find her guilty. Hardly was the verdict rendered before the foreman made a statement of the ground of her condemnation, and she sent her declaration to the Court in reply. The Governor, who himself was not unmerciful, saw cause to grant a reprieve; but Parris had preached against Rebecca Nurse, and prayed against her; had induced 'the afflicted' to witness against her; had caused her sisters to be imprisoned for their honourable sympathy. She must perish, or the delusion was unveiled; and the Governor recalled the reprieve. On the next Communion day she was taken in chains to the meeting-house to be formally excommunicated by Noyes, her minister, and was hanged with the rest. 'You are a witch, you know you are,' said Noyes to Sarah Good, urging a confession. 'You are a liar,' replied the poor woman; 'and if you take my life God will give you blood to drink.'

"Confessions rose in importance. 'Some not afflicted before, were so presently after it.' The jails were filled; for fresh accusations were needed to confirm the confessions. 'Some, by these

their accusations of others'—I quote the cautious apologist Hall—'hoped to gain time and get favour from the rulers.' 'Some of the inferior sort of people did ill offices, by promising favour thereby, more than they had ground to engage. Some, under these temptations, regarded not as they should what became of others, so that they could thereby serve their own turns. Some have since acknowledged so much.' If the confessions were contradictory; if witnesses uttered apparent falsehoods, 'the devil,' the judge would say, 'takes away their memory, and imposes on their brains.' And who would dare to be sceptical—who would disbelieve confessors? Besides, there were other evidences. A callous spot was the mask of the devil; did age or amazement refuse to shed tears; were threats after a quarrel followed by the death of cattle or other harm; did an error occur in repeating the Lord's Prayer; were deeds of great physical strength performed—these were all signs of witchcraft. In some instances the phenomena of somnambulism would appear to have been exhibited, and 'the afflicted, out of their fits, knew nothing of what they did or said in them.'

"Again, on a new Session, six are arraigned, and all are convicted. John William had, as an officer, been employed to arrest the suspected witches. Perceiving the hypocrisy, he declined the service. The afflicted immediately denounced him, and he was seized, convicted, and hanged.

"At the trial of George Burroughs the bewitched persons pretended to be dumb. 'Who hinders these witnesses,' said Stoughton, 'from giving their testimonies?' 'I suppose the devil,' answered Burroughs. 'How comes the devil,' retorted the chief judge, 'so loath to have any testimony borne against you?' and the question was effective. Besides, he had given proof of great, if not preternatural strength. Cotton Mather calls the evidence 'enough;' the jury gave a verdict of guilty.

"John Proctor, who foresaw his doom, and knew from whom the danger came, sent an earnest petition, not to the Governor and Council, but to Cotton Mather and the ministers. Among the witnesses against him were some who had made no confession until after torture. 'They have already undone us in our estates, and that will not serve their turns without our innocent blood;' and he begs for a trial in Boston, or, at least, for a change of magistrates. His entreaties were in vain, as also his prayers, after condemnation, for a respite."

"Among the witnesses against Martha Currier, the mother saw

her own children. Her two sons refused to perjure themselves till they had been tied neck and heels so long that the blood was ready to gush from them. The confession of her daughter, a child of seven years old, is still preserved."

"The aged Jacobs was condemned, in fact, by the evidence of Margaret Jacobs, his granddaughter. 'Through the magistrates' threatenings and my own vile heart'—thus she wrote to her father—'I have confessed things contrary to my conscience and knowledge. But, oh! the terrors of a wounded conscience who can bear?' And she confessed the whole truth before the magistrates. The magistrates refused their belief, and confining her for trial, proceeded to hang her grandfather."

"These five were condemned on the third, and hanged on the nineteenth of August; pregnancy reprieved Elizabeth Proctor. To hang a minister as a wizard was a novelty; but Burroughs denied absolutely that there was, or could be, such a thing as witchcraft in the current sense. This opinion wounded the self-love of the judges, for it made them the accusers and judicial murderers of the innocent. On the ladder Burroughs cleared his innocence by an earnest speech, repeating the Lord's Prayer composedly and exactly, and with a fervency that astonished. Tears flowed from the eyes of many; it seemed as if the spectators would rise up to hinder the execution. Cotton Mather, on horseback among the crowd, addressed the people, cavilling at the ordination of Burroughs as though he had been no true minister; insisting on his guilt, and hinting that the devil could sometimes assume the appearance of an angel of light, and the hanging proceeded.

"Meantime the confessions of the witches began to be directed against the Anabaptists. Mary Osgood was dipped by the devil; the Court still had work to do. On the ninth six women were condemned, and more convictions followed. Giles Cory, the octogenarian, seeing that all were convicted, refused to plead, and was condemned to be pressed to death. The horrid sentence—a barbarous usage of English law never again followed in the Colonies—was executed forthwith.

"On the twenty-second of September eight persons were led to the gallows. Of these Samuel Wardwell had confessed, and was safe; but from shame and penitence he retracted his confession, and, speaking the truth boldly, he was hanged—not for witchcraft, but for denying witchcraft. Martha Cory was, before execution, visited in prison by Parris, the two deacons, and another member

of his church. The church records tell that, self-sustained, she 'imperiously' rebuked her destroyers, and 'they pronounced the dreadful sentence of excommunication against her.' In the calmness with which Mary Easty exposed the falsehood of those who had selected from her family so many victims, she joined the noblest fortitude with sweetness of temper, dignity, and resignation. But the chief judge was positive that all had been done rightly, and 'was very impatient in hearing anything that looked another way.' 'There hang eight firebrands of hell,' said Noyes, the minister of Salem, pointing to the bodies swinging on the gallows.

"Already twenty persons had been put to death for witchcraft; fifty-five had been tortured or terrified into penitent confessions. With accusations, confessions increased; with confessions, new accusations. Even 'the generation of the children of God' were in danger of falling under that condemnation.' The jails were full. It was also observed that no one of the condemned confessing witchcraft had been hanged. No one that confessed, and retracted a confession, had escaped either hanging or imprisonment for trial. No one of the condemned who asserted innocence, even if one of the witnesses confessed perjury, or the foreman of the jury acknowledged the error of the verdict, escaped the gallows. Favouritism was shown in listening to accusations, which was turned aside from friends or partisans. If a man began a career as a witch-hunter, and becoming convinced of the imposture declined the service, he was accused and hanged. Persons accused, who had escaped from the jurisdiction in Massachusetts, were not demanded, as would have been done in case of acknowledged crime—so that the magistrates acted as if witch-law did not extend beyond their jurisdiction. Witnesses convicted of perjury were cautioned, and permitted still to swear away the lives of others. It was certain people had been tempted to become accusers by promise of favour. Yet the zeal of Stoughton was unabated, and the arbitrary Court adjourned to the first Tuesday in November. 'Between this and then,' wrote Brattle, 'will be the great assembly, and this matter will be a peculiar subject of agitation. Our hopes,' he adds, 'are here. The representatives of the people must stay the evil, or New England is undone and undone.'

"Far different was the reasoning of Cotton Mather. He was met 'continually with all sorts of objections and objectors against the work done at Salem.' The obstinate Sadducees, 'the witch-advocates,' who esteemed the executions to be judicial murders,

gained such influence as to embarrass the Governor. But Cotton Mather, still eager 'to lift up a standard against the infernal enemy, undertook the defence of his friends; and he sent to Salem for an account strong enough 'to knock down' 'one that believed nothing reasonable,' promising 'to box it about among his neighbours till it come he knows not where at last.' Before the opening of the adjourned Session of the General Court, the indefatigable man had prepared his narrative of the 'Wonders of the Invisible World,' in the design of promoting 'a pious thankfulness to God for justice being so far executed among us.' For this book he received the approbation of the President of Harvard College, the praises of the Governor, and the gratitude of Stoughton."

But relief was soon to come. The enormities practised in the name of religion brought forth a champion of reason, and as might be expected, he was accused of being an infidel, "a coal from hell," "a malignant, calumnious, and reproachful man." Unlettered, but intelligent, Robert Calef was to do in New England a similarly good work to that done by Reginald Scott at home. He had much to contend with, for the Rev. Dr. Cotton Mather and his friends, the Rev. Mr. Noyes and the Rev. Mr. Parris, had not only added to their power of detecting and casting out devils the gift of healing, but had supplemented it by working miracles in Boston, which were as well, though not as formally, attested as those of St. Médard.

No doubt it will be said that all this is ancient history—let that be granted that it is so; but have we not apostolic authority for the statement, "Whatsoever things were written aforetime were written for our learning," and has not the most accomplished of English gentlemen stated, "It is manifest that all government of action is to be gotten by knowledge, best by gathering many knowledges, which is reading." Of course nothing approaching these barbarities dare be attempted in this "Age of Reason," but we are not free from proceedings as absurd and irrational; those who are at all sceptical on this point should read the volumes of "Thy Healer," issued from the Bethshan Faith Healing Home.

Nothing surpassing the cures noted was effected by Prince Hohenlohe, Deacon Paris, or Mesmer. The Rev. Mr. Boardman is, or was, the High Priest of the community, and he is assisted by Mrs. Boardman in his miraculous *séance*. In volume I., under date of October 6th, 1884, I find a case of cancer cured; the tumour had been twice cut out and grew the third time, but by

prayer and suggestion it disappeared, and the flesh skinned over the part.

The Rev. W. E. Boardman and his disciples make little of such cures as Mesmer's disciples take pride in; for they attack all manner of organic diseases. On page 307 a Mr. Cook reports the restoration of sight in an eye which "was destroyed twenty-six years ago;" a Miss Sargeant, who suffered from total deafness, had her hearing restored; Miss Lilian Bailey, of Liverpool, had her attack of typhoid fever, complicated with diphtheria, in which she "was unconscious," suddenly cut short. The cures are so marvellous, and so far eclipse anything attempted by the mesmerists, that I give a few summaries:—

"A dear woman, who was quite blind, came to us a few Fridays back. She had never seen her little boy, a child of about three years old. While having tea with us she suddenly discovered she saw the rim of her teacup."

"My little girl was ill with measles. At a holiness meeting last Sunday afternoon we prayed for her. The child fell asleep at once, and three hours afterwards woke up healed."

"A woman eight years bed-ridden from utter prostration, when she was anointed, got up."

"A young girl was healed of a loose kidney." Who made the diagnosis is not stated.

"This week we prayed over two girls, both blind in one eye. Both are restored; one can read large print now with the eye which was blind; the other can read the smallest type with her formerly blind eye, and *she* is also healed of spinal disease."

Meetings were held in Exeter Hall, and were largely attended. Nothing in medicine compares with Bethshan, and it is a pity some members of the staff of each hospital were not sent to learn Boardman's methods. The result could hardly fail of being more helpful than the memorable exodus to Berlin for the health-giving, life-saving nostrum—the tolerated quackery of Koch.

There is a continuity of miracles that the unthinking of to-day do not recognise. Bethshan, flourishing in 1884 and 1885, was the direct successor to the Trudel Home, of 1860, in Switzerland, where Dorothea Trudel, her sister, four nurses, and Mr. Samuel Geller, brother-in-law of Bishop Gobart, of Jerusalem, presided. These good people effect, by prayer and suggestion, miraculous cures, until two sudden deaths took place in the home. Then it seemed the charm was broken, and the Trudel Home was shut

up, like St. Médard's cemetery, and miracles were forbidden by the unbelieving Swiss Government.

Piety is not always necessary to ensure healing; oftentimes the gift may be unconsciously exercised, as was shown in the case of the infant of Kherberg, who, not being of a very lovable disposition, bit, scratched, and kicked the afflicted supplicant, and, strange to say, the kicking and biting of the young savage restored the sick to health. Crowds watched the lively boy, and if he washed his hands the soiled water was immediately seized upon and drunk by those suffering—in every case with the happiest result. The boy's father made so much money by the credulity of the people that he got tired of swindling the sick, and retired, like Mesmer, after making his fortune.

Indeed the gift of healing is sometimes given to incorrigible sinners; such a one was Rosino, of whom Dr. Arthur Jacob makes mention in his pamphlet. Rosino encouraged the popular belief that he was in league with the devil, and his fame spread far and near. All the occult arts were his—"He is an accomplished enchanter. He is a fortune-teller, and cures all diseases. But his most profitable patients are those who are supposed to be possessed by an evil spirit. When he is employed to expel his infernal majesty, he always chooses the middle of a dark night, at which time he leads the possessed person to some very retired and lonely cavern among the mountains. Here he suddenly assails the patient with blows in the face and kicks in the body, with a view, no doubt, of rendering the devil's residence uncomfortable. When this treatment had been continued long enough to convince the poor sufferer that this point had been gained, he cries out suddenly, 'There he goes, there he goes,' and at the same moment fires a gun at the fugitive demon, in order to give him such a fright that he will be in no hurry to return. After this the patient crawls home, bruised from head to foot, and well satisfied with the efficacy of the cure."

The effect of a mental impression on the mind prepared for it, and anxiously looking forward to some great benefit from it, is well shown in the following cure, which is also brought forward by Dr. Jacob:—

"A person supposed to be possessed was brought before the Bishop of Amiens, in the reign of Henry the Third. The Bishop, whether he thought the man's illness was counterfeited, or really believed in the power of the mental impression in curing convulsive

diseases, adopted the following plan:—He ordered a layman to dress in sacerdotal robes, and read before the patient certain portions of Cicero's epistles, with all the ceremonies usually adopted at exorcisms. The consequence was that the man departed effectually cured."

The one requirement for success is the creation in the patient's mind of hopeful expectancy. Divert the attention from the immediate surroundings, foster the hope created in him, and then work the spell. The outcome will be a large measure of success—success attending every method, whether the deluded sit, as the monks of Athos, gazing at their navels, or are diverted from their ordinary thoughts by sweet music, perfumed air, and female beauty, as Emma Lyons and her accomplice, Graham, utilised in their famous "Temple of Health."

The strange thing is the unvarying round of these miraculous curers. One absurdity is no sooner disposed of than a successor steps forward claiming recognition as a healer, and each claimant for favour is quite prepared to condemn the discarded predecessor. Duncan Campbell displaced Greatrakes, Mesmer displaced Cagliostro, metallic tractors disappeared before animal magnetism, and so on to the end.

But it is asserted that in hypnotism you have nothing of quackery or charlatanism; the effects are produced by well-known methods, and the art is practised by men who have justly attained high honour in the profession. This last fact is really embarrassing in considering the question. Honoured names in the medical profession are associated with hypnotism; but however much of respect the names command—and of them I desire to say nothing, or imply nothing, other than in their praise—no disrespect for the individuals can be construed out of an examination of an unusual method for the cure of disease, especially when the advocates of the method solicit criticism.

That those of the medical profession who have adopted hypnotism have done so in good faith it would be an impertinence to question. That they have found a certain measure of success by the method cannot be doubted; but I seek only to examine the methods by which this effect is obtained, and how far this is generally beneficial to humanity, and is the process a workable one. Above, I have made many quotations for the purpose of showing that the results and the methods of obtaining them in no essential differ from the results obtained by the discredited and rejected methods

of the past; that in the great majority of cases patients practised self-imposition, and that the good effects were due to functional exaltation of the nervous system, and were of the most ephemeral character. Even making very liberal allowances to the hypnotists, we find that only a small percentage of the afflicted can be hypnotised—those of weak intellect and hysterical persons—and there are but few practitioners who possess the “gift” of hypnotising.

But hypnotism shall ever find its worst enemies amongst its disciples. Their claims are too extravagant to be admitted, and are tolerated with the serenity of temper that with all patience submits to the recital of hallucinations by an hysterical girl.

If men seriously assert that they believe the published reports of some of the hypnotic miracles, nothing can be said. Ordinary mortals weigh probabilities before deciding; but those who accept the statement that a “suggestion” can change a rogue’s moral character, or convert a stupid boy into a preternaturally intellectual one, possess more than the mustard-seed measure of faith.

THE MIDDLESEX HOSPITAL.

THE Report of this hospital for 1889 appears in 1891. In the Medical Department 1,556 patients were treated—795 males, 761 females. The average of admissions was 3·87 per diem. The mortality “on the total number of patients discharged” was 14·15 per cent. In the Surgical Department 1,670 cases were admitted—918 males, 752 females. The mortality, “reckoned on the number of patients discharged, including those who died,” was 6·9 per cent.; or, if deaths from malignant disease are excluded, 3·4. The late Surgical Registrar (Mr. W. Roger Williams) gives analytical summaries of 232 cases of sarcoma, non-malignant neoplasms, and cysts, under treatment in 8 years, 1882–9, and abstracts of 40 cases of cancer and tumour treated during 1889.

ICTERUS TREATED SURGICALLY.

M. TERRIER, Surgeon to the Bichat Hospital, Paris, in a communication to the Académie de Médecine, at the meeting of the 4th of November, gives the history of a man, thirty-three years of age, who was suffering from jaundice, pyrexia, and renal pains. He performed an abdominal incision and found nothing other than an enormously-hypertrophied liver. He then made a biliary fistula opening on the cutaneous surface of the abdomen. The man made a rapid recovery; the temperature fell, the icterus disappeared, the renal pains ceased, his appetite returned, and he left the hospital cured.—*Le Mercredi Médical*, 5th November, 1890.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Causes and Prevention of Phthisis. By ARTHUR RANSOME, M.D., M.A., F.R.S.; Honorary Physician to the Manchester Hospital for Consumption and Diseases of the Throat. London: Smith, Elder & Co. 1890. 8vo. Pp. 146.

It is well, perhaps, that this little book saw the light before the brilliant meteor of tuberculin blazed into a flame, swept across the sky of medical practice, and, shall we add, faded out of sight, leaving behind it a darkness by contrast more profound than that which had previously veiled from view a specific remedy for tuberculosis. Be that as it may, from cover to cover of the book there is no mention of Koch's discovery, for the very good reason that it had not yet been made when the Milroy Lectures for 1890 were delivered by Dr. Ransome. It is positively refreshing to take up a work on phthisis which is silent on the subject of "Kochin" or tuberculin, but the author was fully aware that when he wrote attempts were being made to discover an antibacillary "vaccine," for he says (at page 139) that, although he would not object to further researches in this direction, "it appears to be hardly likely that they will be successful against a complaint in which one attack confers no immunity against a second." These are weighty words, and must appeal to the common sense of the Profession.

The book includes four lectures—the first on the pathology and affinities of tubercle, the second on the topography and distribution of phthisis, the third on its predisposing causes, and the fourth on the prevention of the disease. Dr. Ransome does not add much to our knowledge of the pathology of phthisis, but he traces with great distinctness its affinities to other infective diseases, such as chronic glanders or farcy, actinomycosis, frambœsia or yaws, the fungus disease of India, or Madura Foot; but especially syphilis and leprosy. Of all these disorders, unquestionably the nearest approach to tuberculosis is to be found in leprosy. A similar micro-organism (a "bacillus") is closely associated in a causal

relation with each disease. Leprosy is like tubercle in its mode of attack, its slow progress, its termination in death. The pathology of the two diseases is also strikingly similar. Both are distinctly endemic diseases. They are equally uninfluenced by climate and temperature. Precisely the same controversy as to contagiousness and the influence of heredity is now waged in the case of both maladies: so that, in fine, it is not surprising that, with all these points of similarity, the question should be asked—as it is by the great Norwegian authority, Danielssen (not “Daniellsen,” as Dr. Ransome repeatedly spells the name)—“whether leprosy itself is not a tuberculous disease.” Dr. Ransome goes so far as to say that the resemblance which the bacillus of tubercle bears to the bacillus of leprosy may encourage us to hope that, as this latter disease has been banished from our country, so also may the different forms of tuberculosis ultimately disappear. We fear that happy day is yet far distant.

The author’s arguments in the second Lecture on the “Topography and Distribution of Phthisis” are of the iconoclastic order. Climate, according to him, has little to say to the prevalence and fatality of tubercular consumption. The disease appears upon the death-roll of almost every nation. In all climates—north, south, east, and west—no matter how varied the conditions under which men live, however much they differ in race, in diet and clothing, in habits of life, wherever human beings are congregated together, there phthisis is to be found. In the light of our present knowledge of the essential cause of the disease, there is nothing surprising in this. It is true—as shown in Lombard’s maps^a—that there are regions still untainted by the disease. These are—(1) deserts, or sparsely populated places; (2) mountain ranges or high plateaux; and (3) arctic or antarctic regions. But where there are few human beings it is hardly likely there will be much disease. Even in the case of elevated sites, although no doubt the air is purer than on the plains, “we are obliged again to fall back upon the conditions of social life as a much more powerful factor than the influence of climate or locality.” Nor again is there a necessary connection between dampness of soil and consumption. Dr. Buchanan’s experience with respect to the influence of drainage of towns on the prevalence of the disease has not always been confirmed by other observers. At the same time Dr. Ransome quotes the details of an inquiry made by himself into this subject, which

^a *Climatologie Médicale.*

make it evident that there is a close relationship between the condition of the soil and consumption; and the observations of Bowditch in America and of Buchanan in England have been thoroughly confirmed by Mr. A. Haviland and by the Registrars-General for Ireland and for Scotland. Extreme cold is antagonistic to consumption—a fact which is entirely opposed to the notions of our forefathers on the subject. Cold countries like Greenland, Iceland, Labrador, Spitzbergen, Nova Zembla, Finland, Siberia, and Canada, are to a great extent exempt from consumption, and it is owing to this “that we are unable to say that climate is wholly without influence upon the disease.” The dryness and comparative purity of the atmosphere, but, above all, the sparseness of the population, contribute to this result. The author then seems to contradict himself, for he says:—“The Esquimaux are not seldom affected by consumption.” . . . “In Greenland phthisis is one of the commonest causes of death, and similar reports come from New Archangel and Alaska. In Canada, also, at one time the soldiers sent to that station died at three times the rate of the ordinary civil population in England in healthy districts” (page 48). He afterwards shows, however, that the occupations of a people have an important influence over the disease, and that its prevalence and fatality increase with the herding together of populations. So long ago as 1858, 1860, and 1861, Dr. Headlam Greenhow, in a series of admirable Reports to the Privy Council, pointed out the influence of occupation as a cause of “pulmonary disease” in the abstract. The inhalation of various kinds of dust, stooping postures at work, exposure to sudden and extreme changes of temperature, and bad ventilation—all render work-people peculiarly liable to these diseases, and particularly to phthisis. Air rendered impure by respiration, when re-breathed, is poisonous—figuratively and literally—a truth which, as Dr. Ransome fairly observes in a footnote on page 63, “was hardly fully accepted until Dr. [Henry] MacCormac [of Belfast] took up the subject, and with iteration insisted that wherever there is foul air, unrenewed air, impure air, . . . there we meet consumption, there we meet scrofula, and an untimely death.”

Dr. MacCormac had the courage of his convictions—and they are our convictions also—for in his work on “Consumption and the Air Re-breathed,” he gives a graphic and startling picture of his own practice in the way of ventilation as a preventive of phthisis. He says:—“I would speak in especial of a chamber

which I once entered, as I had often before entered it, early one winter morn. It was the sleeping closet of my son. His low trestle-bed stood betwixt the severally widely-open window and door, while the keen but exquisitely fresh sweet atmosphere from wind-swept hills careered through the apartment ceaselessly. The hue of exuberant health mantled over the boy's every feature, while, bordering the margin of the coverlet, there extended a fringe of pure white snow, which the genius of the fragrant night had wafted in all harmlessly during the hours of my child's repose." This quotation breathes poetic fire not less than the spirit of enthusiasm. As Dr. Ransome, in giving the passage, remarks:—"Truly it needs an enthusiast to carry a principle so far as this, but I should be glad if something very little short of it were adopted in every night-nursery in the kingdom—if it could be said of all of them that—

"Through the half-opened casements now there blew
A sweet fresh air, that of the flowers and sea
Mingled together, smelt deliciously.'" ^a

In Lecture III., on the "Predisposing Causes of Phthisis," many important questions are discussed, particularly the question of the production of tuberculosis by food. After quoting and reviewing the evidence for and against such an origin of this disease, Dr. Ransome concludes that we cannot deny the possibility of the transmission of tubercle by means of the flesh of cattle, and adds that *it is highly probable* that mesenteric and intestinal disease is not infrequently produced, especially in children, by the use of infected milk. In his opinion, however, there are certain broad considerations that should prevent us attributing much of the phthisis that prevails to either of these sources of infection. It seems to us that what between the effect of cooking and the probably destructive influence of the digestive juices on the bacilli tuberculosis, that primary intestinal infection must be comparatively rare. Be that as it may, the usual way in which the human organism is infected with tubercle is by inspiration of foul and virus-infected air.

Lecture IV., on the "Prevention of Phthisis," should be carefully studied by every Medical Officer of Health as well as by every physician in the kingdom. It forms a splendid contribution to the rational and scientific prophylaxis of a disease which is still, in the closing decade of the nineteenth century, a scourge of man-

^a Earthly Paradise, ii., 281.

kind and an *opprobrium medicince*. Some of the author's recommendations are especially noteworthy—as, for example, his suggestive query whether persons suffering from consumption, if they are without proper “lodging and accommodation” for preventing infection, should not be provided with asylums or special hospital accommodation, until the disease is either cured or ends in death; and, again, his proposition that phthisis should be classed with other infective disorders, and that every case, as soon as it is discovered, should be notified to the Medical Officer of Health. For ourselves, we consider that it is little short of a public scandal that pulmonary phthisis should be treated in the wards of a general hospital, and that few (if any) precautions should be taken to disinfect or to destroy the poison-reeking sputa of so fell and yet so preventible a disease.

We have read Dr. Ransome's book with pleasure and profit. There is, it is true, an involved passage here and there, and at times he seems to contradict himself in a measure; but the general impression left on the reader's mind is that the author has mastered his subject, and that his work is a solid contribution to the literature of Consumption.

The Surgeon's Pocket-book. By SURGEON-MAJOR PORTER. Fourth Edition. Revised and Edited by BRIGADE-SURGEON C. H. Y. GOODWIN. London: Charles Griffin & Co. 1891. 8vo. Pp. 274.

THIS most useful little book should be in the hands of all army and volunteer surgeons; it contains a vast amount of practical information for active service in the field, and has the great advantage over most works of the kind of being small enough to fit in the pocket. The frontispiece, which shows the position of the bearer's companies, collecting stations, dressing stations, and field hospitals during an engagement, gives a capital idea of the work of our so-called non-combatants in war, and shows how very much under fire the M. S. really is. The first portion of the work is taken up with various extemporary means of transporting sick and wounded soldiers, and the duties of medical officers in the field, tables being given of the war-strengths of a bearer's company, field hospital, &c., and their transport equipment both by wheeled conveyance and pack animals. There are also illustrations of the method of pitching a field hospital camp, &c.

These are followed in the latter portion of the work by descriptions of all the possible surgical emergencies and the modes of treating them, with details of many of the operations army surgeons are called on to perform, and the appliances necessary for them, with many illustrations.

The work concludes with short chapters on sanitation, supplies required in the field, and a useful formulary.

Lectures on Diabetes. By ROBERT SAUNDBY, M.D., Edin.; F.R.C.P., Lond.; Emeritus Senior President of the Royal Medical Society; Fellow of the Royal Medico-Chirurgical Society; Member of the Pathological Society of London; Physician to the General Hospital, Birmingham, &c. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co. 1891. 8vo. Pp. 232.

JUST two years have elapsed since it was our pleasing duty to record in these pages our favourable opinion of Dr. Robert Saundby's "Lectures on Bright's Disease," which had then recently issued from the press.

Our experience of that work led us to greet with pleasurable anticipation a new book from the same pen, entitled "Lectures on Diabetes," and published at the beginning of the present year. These "Lectures" include the "Bradshawe Lecture" on the morbid anatomy of diabetes, which the author delivered before the Royal College of Physicians of London, on August 18, 1890. In this lecture, which is reprinted *verbatim*, Dr. Saundby gives an account of the changes observed in the principal organs of the body and in the blood of the diabetic patient, and he concludes each section with comments upon points of interest on which his own observations have appeared to throw light.

The work is divided into two parts—the first and larger referring to Diabetes Mellitus, the second (consisting of only one chapter of 14 pages) to Diabetes Insipidus.

In a short historical introduction Dr. Saundby lays under contribution the brief bibliographical account of diabetes given by August Hirsch in his masterly "Handbook of Geographical and Historical Pathology," but he subsequently largely supplements that writer's description of the geographical distribution of the disease by statistical data he has been enabled to collect through the courtesy of the Right Hon. Lord Knutsford, G.C.M.G., her

Majesty's Secretary of State for the Colonies, and through the kindness of numerous friends, whose names are quoted in Chapter II.

The physiology of glycosuria, its experimental production, and the theories of its pathological production, are briefly discussed in the first chapter. The author impartially points out that we shall not have a proper basis for a rational pathology of diabetes until we come to know definitely in what form the products of saccharine and starchy food leave the liver; by what paths the influence of the various nerve-lesions, which produce glycosuria, reaches the liver; and the nature of the influence (if any) of the pancreas on the sugar produced by digestion in the alimentary canal.

The theories of glycosuria mentioned are four in number—namely, the vaso-motor theory, according to which the essential feature in the production of excessive discharge of sugar from the liver is vaso-motor paralysis of the branches of the hepatic artery; the theories of Cantani and Sir B. W. Foster, according to whom in diabetes the liver forms an abnormal sugar, *paragluce*, which is not oxidisable; the theory of Seegen, that under certain circumstances the tissues lose their capacity for assimilating sugar; and the theory of H. Senator and Latham, who place the seat of the production of sugar in the muscles.

In the succeeding chapters the ætiology, morbid anatomy, and clinical history of diabetes are considered. Notes of eighteen cases are given in illustration of the clinical history of the disease—a subject which is practically continued in the fifth chapter on “Diabetic Coma.” Chapter VI., on “Treatment,” is written in Dr. Saundby's best style. At the outset he draws a distinction between the frequently curable glycosuria of elderly people and the diabetes of patients under forty-five. Four main objects are sought to be fulfilled in the treatment of diabetes mellitus:—

1. To relieve the urgent and distressing thirst.
2. To diminish the quantity of urinary water.
3. To restore the body-weight to the normal healthy standard.
4. To remove, if possible, all traces of sugar from the urine.

This last object, Dr. Saundby points out, it is sometimes unwise to attempt, for many elderly diabetics perceptibly decline in health if we enforce those strict rules of diet, which nevertheless control their glycosuria most effectually. The diet question in diabetes is very fully and well discussed. We notice that the author apparently endorses Dujardin-Beaumetz' plan of allowing his diabetic patients 100 grammes (7 ounces) of potatoes daily, as containing less starch

than gluten bread. He bases this practice on de Nédats' estimate that the amount of starch in potatoes is only 15·5 per cent. This estimate falls considerably short of that given by other analysts—for example, Letheby (18·8 per cent.) and Payen (20·0 per cent.), both quoted by F. W. Pavy, in his excellent "Treatise on Food and Dietetics" (London: J. & A. Churchill, 1874). For ourselves, we would allow a moderate quantity of potatoes to diabetic patients, and without fear of bad results.

Dr. Saundby recommends saccharin—which he mentions under this name and not "glusidum"—as a good substitute for sugar. Formerly he used glycerine, and his observations confirmed those of Kussmaul, that it does not increase the secretion of sugar. The section on drugs is very interesting. Of many remedies, four claim the chief share of our attention—opium, codein, salicylic acid (or its salts), and salts of bromine. Bromide of potassium does not deserve the name of a specific, but, in the author's opinion, it is the best routine remedy to employ in conjunction with opium. Given in a mixture combined with a little bicarbonate of potassium and some bitter infusion, it very satisfactorily allays the nervous irritability so often present in the diabetic patient.

On page 199 will be found a long list of other remedies and authorities. Of these remedies the most novel perhaps is "Jambul." This drug was originally recommended in 1883 by Banatvala, of Madras, who spoke of it in the highest terms of praise. More recently (1888), Quanjer in Java has formed an equally favourable opinion of it. In 1887, Dr. G. C. Kingsbury drew the attention of the profession in this country to its use in diabetes (*Brit. Med. Journal*, 1887, Vol. I., p. 617). Dr. Saundby administered this drug in a number of cases, giving it in the form of Christy's Jambul perles—which, by the way, are perhaps more frequently mentioned than good taste would suggest. Dr. Saundby's verdict is given in no uncertain terms—"In no single instance," he says, "was any distinct benefit observed to follow its use." The skim-milk treatment recommended by Dr. A. Scott Donkin fares no better at the author's hands, and we are inclined to agree with him that the dietetic value of milk has been over-estimated, and that its use as the sole means of nourishment in protracted and wasting diseases is unwise.

Dr. Saundby's advice as to what and how much the diabetic should drink is sound. He thinks that no restriction should be placed upon the quantity. "Thirst," he says, "is the result of a

natural craving of the tissues for water, and I would flood the tissues of a diabetic, if I knew how to do so." He holds that the subject of the disease would be much wiser to stop at home and order the several mineral waters from a druggist instead of resorting annually to the alkaline mineral springs of the Continent. "Climate," he observes, "has no influence on diabetes, while travelling, and its inevitable consequences, excitement and fatigue, are the most common causes of its fatal termination."

Part II., on "Diabetes Insipidus," contains in one chapter a brief account of simple polyuria and its treatment. Under this last heading, Dr. Saundby remarks that the dryness of the mouth, which causes the patient so much suffering, may be relieved by pilocarpin, or by sucking ice, or lemon, or glycerine lozenges. We would suggest a trial of the effervescing thirst tabloids or lozenges, which were introduced a couple of years ago by Messrs. Burroughs, Wellcome, & Co. One is disposed to thoroughly agree with Dr. Saundby that in the majority of chronic idiopathic cases drugs are of little use, but that happily many instances of spontaneous cure have been recorded.

We dismiss this book with a hearty recommendation. It is a fitting sequel and companion to the "Lectures on Bright's Disease," and establishes Dr. Saundby's right as an original thinker and writer to a niche in the Temple of Medical Fame.

The Medical Digest, or Busy Practitioner's Vade-mecum. Being a Means of readily acquiring Information upon the principal Contributions to Medical Science during the last Fifty Years. By RICHARD NEALE, M.D., Lond., Member of the Dutch Medical Society of Batavia, Java. Third Edition. London: Ledger, Smith, & Co. 1891. 8vo. Pp. 794. Index: Pp. cxxxii.

IN February, 1883, and again in November, 1886, we bore testimony in the pages of this Journal to the value of Dr. Neale's work of a life-time—the now universally-known "Medical Digest." The first edition, published in 1877, formed the seventy-fifth volume of the New Sydenham Society's publications. The second edition issued from the press in 1882 for the first time as an independent work. It was followed in 1886 by the "First Appendix," and now the present, or third, edition is brought down to the end of the year 1890. So far as the *Lancet* is concerned, the work comprises a period of more than fifty years. It professes to afford

a means of ready information regarding such discoveries, new doctrines, and different methods of treatment in each department of Medical Science as are likely to be of interest to the practitioner. It is as a "Digest" of a certain number of periodicals named in the Preface that it is offered to the Profession.

The author points out that the arrangement of a work so voluminous and peculiar has been a difficulty, but this is met by a very copious Index, covering 132 pages, which refers to all subjects under every variety of designation, and contains from 16,000 to 17,000 references, while the book itself has probably 200,000 distinct entries. The index is really the key to the whole work, and has therefore been made as full and comprehensive as possible. It must be referred to in the first instance, when by its aid any subject will be at once found.

These statements will explain the object and scope of Dr. Neale's undertaking. He is a veteran bibliophile, but his half century of literary research has been stored up for future use, like honey in the hexagonal cells of the honeycomb, in the subject-headings and index-entries of this wonderful book.

On the Use of Greek: being the Copy of a Letter to the Parent of one of his Pupils. By MAURICE C. HIME, M.A., LL.D., Head Master of Foyle College, Londonderry. London: Hodges, Figgis & Co. 1891. Pp. 32.

TRULY we live in an iconoclastic age! The customs and traditions of ages are being ruthlessly assailed; nor have the time-honoured and classical studies of the Schools and Universities escaped the onslaught of the reformers. At the annual meeting of the Irish Schoolmasters' Association, held in Dublin last December, a resolution was adopted adverse to the retaining of Greek as a compulsory subject in the first two years of the Arts Course in the University of Dublin, and it is seriously proposed that the Academic Council of the University and the Board of Trinity College should resolve that Greek is to be henceforth merely an optional subject for Junior and Senior Freshmen.

Alas! that such a proposition should be put forward on the very eve of the tercentenary of our great National University.

Attracted, probably, by the movement to abolish the compulsory study of Greek, a father of one of Dr. Hime's pupils at Foyle College, wrote to that well-known and able pedagogue a letter,

the gist of which was that he wished his son to continue his Latin, "since it may be of some service to him in after-life, Latin being so universally known, and the foundation of so many modern languages." But not so his Greek. "For what is the use of Greek?" asks the anxious parent. "How can he derive any benefit from it, seeing that I have determined to place him in a business establishment?" And, furthermore, "will he not, by his discontinuing Greek, have more time to devote to his other studies, in which he is at present decidedly backward?"

Dr. Hime answers his correspondent by advancing the following arguments, upon each of which he enlarges in the booklet before us. Having regard to the importance of the question for all students of medicine—past, present, and to come—we make no apology for quoting these arguments at some length and in some detail.

1. The more ordinary school subjects a boy learns at school the better for him. "Knowledge is power."

2. A boy may change his mind, and desire—years after he had ceased learning Greek—to go in for some examinations at which a knowledge of Greek may be most useful, or even essential. Two striking instances of this are given by Dr. Hime in support of his argument.

3. Latin is more easily and thoroughly learned by the Greek than by the non-Greek boy. In order to learn either language well, one should learn both.

4. A knowledge of Greek is conducive to the mastery and the due appreciation of the English language and literature. Rather more than one in twenty of the words in the English language is derived from Greek, and when we come to the works of Greek origin which relate to the arts and sciences it is exceedingly difficult to ascertain their full meaning or to master their spelling without some knowledge of Greek. What Greek scholar would ever dream of spelling "bicycle" as "bycycle," "phthisis" without its first two letters, "rheumatism" without its second or third, "Sapphic" with one "p," or "graphic" with two?

5. A knowledge of the Greek language and literature is conducive to intellectual enjoyment.

"No matter how rich, or how commercially successful, a man may be, he can scarcely be regarded as liberally educated unless he has some knowledge of that grand language in which the most kingly of poets composed his famous epic; in which the most fascinating of historians

and the most world-famed of philosophers wrote; and in which the most eloquent of all orators still enchants and leads his readers captive."

6. In answer to the argument that "the non-Greek boy will have more time for his other lessons," Dr. Hime contends—with too much truth, alas!—that—

"This too often only means that he has more time to idle than the other boys—a delightful privilege, which he, no doubt, in general enjoys to the utmost. The boys who learn Greek as well as Latin invariably surpass in everything those who learn only the latter, still more those who learn neither of these languages. In short, the boys who learn most are, intellectually, the best. . . . The best cultivated garden is the least overrun with weeds; and the more carefully and diligently and skilfully you cultivate it, the more useful and prolific it will, of course, become. These propositions are obviously mere truisms in the case of the garden. Why, I ask, should they not be generally regarded also as mere truisms—for such they really are—in the case of the mind?"

Dr. Hime's correspondent puts forward two further objections in his letter. He asks:—

"But what is the use of spending years in learning Greek if, after all, the acquired knowledge of the language be so small that within a few years of one's leaving school one forgets it all?"

And again:—

"Would not a sound knowledge of German and French be much better than such a mere smattering of Greek?"

Dr. Hime points out that the first of these questions might just as reasonably be put in regard to the learning of French, German, arithmetic, or any other school-subject. The second question is put in a form that is calculated, if not actually designed, to mislead:—

"A sound knowledge of French or German would undoubtedly be a far superior attainment to a mere smattering of Greek. But no comparison is being instituted between these two attainments. A mere smattering of French or German may be fairly weighed against a mere smattering of Greek, or a sound knowledge of French or German against a sound knowledge of Greek; but we have no right in this discussion to weigh a sound knowledge of French or German against a mere smattering of Greek."

Writing in a Medical Journal, as teachers ourselves, and for teachers of the Theory and Practice of Medicine and of the Science and Art of Surgery, we make no apology for quoting at

such length a schoolmaster's opinions on the subject of classical education. We have ever held and will always hold that, other things being equal, the best educated medical student will make the most able physician and the most skilful surgeon—using the terms “educated,” “able,” and “skilful,” in the fullest and noblest sense. The claim of our profession to the title-roll of a learned profession rests on a solid basis only so long as a high standard of education in Arts is required of all those who seek to enter its portals. Hence, we view with concern recent attempts to tamper with the Arts curriculum as regards the study of Greek, and we trust the day is far distant when our National University will take the unwise and fatal step of practically banishing Greek from the Arts course in the Freshmen years. Why dim in this way the lustre which for full three centuries she has been shedding on Ireland and its metropolis?

RECENT WORKS ON APPLIED ANATOMY.

1. *Manual of Surgical Anatomy.* By ALFRED W. HUGHES, M.B., &c.; Lecturer on Anatomy, School of Medicine, Edinburgh. Edinburgh: E. & S. Livingstone. 1890. Pp. 171.
2. *Aphorism in Applied Anatomy and Operative Surgery.* By THOMAS COOKE, F.R.C.S., &c. London: Longmans, Green & Co. 1891. Pp. 173.

1. MR. HUGHES tells us that his little work is compiled from the notes used by him in a class of surgical anatomy which he has conducted for some time, with the addition of a number of illustrations, most of which take the form of diagrammatical sections. The object of the book seems to be to present to the reader the chief and important facts of anatomy which bear upon surgery, in a short space, in an easily intelligible form, and freed from all unnecessary minor details. This it seems to have done very effectively. To those who want to know surgical anatomy thoroughly, and who are willing to devote time to its study, we would say, read some of the larger books upon the subject; but to the busy man who can devote little time to intricate and troublesome detail, as well as to the student who fears the larger works on account of their size and the difficulty of mastering them, to these we would say, “Here is a simple book, plainly written, with the main facts of the subject clearly exposed, it is easily understood, easily

remembered, it can be read through in half a dozen hours, we recommend it to you, its perusal will supply you with many excellent and useful anatomical facts which you ought to know." We think that its small size, combined with the fact that it is not at all jotty, ought to make it favourably received by those who are frightened by the sight of a large work. It has always been to us a matter of surprise that works on applied anatomy affect either the surgical or the medical side of the question, instead of embracing both. It is hard to induce people to read one work on applied anatomy; it is doubly hard to induce them to read two. In the book under review, for instance, there is not a word about the lung, the heart, or the liver. Now, we consider this a serious omission. A book on applied anatomy should give briefly the medical as well as the surgical bearings of the subject. Another omission which we think faulty is the female genital and pelvic organs, although they may be "fully described in all gynecological works."

With these exceptions, the subjects in the manual seem to be very judiciously selected. We would wish to point out a serious error which seems to have crept in, in part through the use of the word "inwards" for "downwards." On page 78, it is said of the lateral sinus that having reached "a point one and a half inches behind and a half-inch above the level of the auditory meatus it bends *inwards* to reach the jugular foramen." It should be, "it bends downwards," &c. Taken altogether, we are pleased with the little work. We recognise the fact that it contains a large amount of useful anatomical information, and we warmly recommend it to those who are not willing to read a larger book on the subject.

2. The full title of Mr. Cooke's book is "Aphorism in Applied Anatomy (or Anatomy for the Final Examinations) and Operative Surgery, including 100 Typical Vivâ Voce Questions in Surface Markings, &c." But the size of the work is not to be judged from the length of its title. It is but a small book of 173 pages, and it need not be pointed out that only a very brief account of the subjects enumerated upon its title-page can be condensed into its pages. The book is essentially an examination note-book, prepared specially for the use of students about to present themselves for the final examination in London. To such it probably may be very useful, but as a manual of surgical anatomy or of operations we can hardly

recommend it. The first 85 pages are devoted to applied anatomy, and those parts only which have been found most useful for final students to know are briefly treated. A continuous connected account of parts is not given; bits are picked out here and there, and notes upon them are given.

In these 85 pages there are some statements to which exception might be taken. We read that the fold of the buttock corresponds very nearly to the lower border of the glutæus maximus. Anyone who has observed the course of the border of this muscle will see how far the statement is astray. That the outer boundary of the saphenous opening is "well defined" is questionable. A note of interrogation might also be put after the observation that the deep layer of the superficial fascia in the inguinal region is bound down to Poupart's ligament. Nor do we like the surface markings for the lateral sinus, &c. The next 70 pages are devoted to operative surgery. They certainly contain many useful and important hints—their perusal will well repay the trouble—but they are also open to the objection of being selected. Still, the selection is wise and judicious, and they can be recommended—for *examination purposes*. They are too brief and too incomplete for practical purposes. The hundred questions at the end may help to stimulate the student to read some applied anatomy in order to answer them. On the whole, our opinion of the book may be briefly told. We think that it would be of use to senior students for *examination purposes*. For the ordinary medical men we can see no great benefit to be derived from reading it.

A System of Oral Surgery; being a Treatise on the Diseases and Surgery of the Mouth, Jaws, Face, Teeth, and Associate Parts.
By JAMES E. GARRETSON, A.M., M.D., D.D.S., &c. Fifth Edition. Philadelphia: J. B. Lippincott Company. 1890. Pp. 1364.

THIS book has reached a fifth edition; we suppose it has therefore supplied a gap in American medical literature. It is mainly a compilation of the work and theories of others, combined with full details of cases which have come under the author's care. The plates are numerous, and for the most part good, and for purposes of reference the work will doubtless prove of a certain value. But the author's standpoint is amply illustrated by the following quotation:—"Figs. 902, 903, and 904 are illustrations taken from life

of cancerous tumours. All of them are NEOPLASMS in the sense of being new formations. A section of any one of these growths would not unlikely show, under microscopic enlargement, cells of sarcomatous character, or if not these, then those expressive of the encephaloid condition. Whether one kind or the other is of no practical meaning to the classification here adopted. The tumours are NEOPLASMS. Their presence is without explanation. The diagnosis is CARCINOMA" (p. 1210). *Ex uno disce omnes.*

THE ADDITIONS TO THE BRITISH PHARMACOPŒIA, 1890.

1. *Supplement to a Text-Book of Pharmacology, Therapeutics, and Materia Medica.* By T. LAUDER BRUNTON, M.D., D.Sc., LL.D. (Hon.) Aberd., F.R.S. London: Macmillan & Co. 1891. Pp. 14.
2. *Notes on the Additions made to the British Pharmacopœia, 1890.* By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P. London: H. K. Lewis. 1891. Pp. 22.
3. *New Official Remedies, B.P., 1890.* Supplement to "Materia Medica and Pharmacy." By A. W. GERRARD, Pharmaceutical Chemist; Examiner to the Pharmaceutical Society; Fellow of the Chemical Society; Teacher of Materia Medica and Pharmacy to University College; Corresponding Member of the Philadelphia College of Pharmacy. London: H. K. Lewis. 1891. Pp. 40.

WE have not been favoured, in our editorial capacity, with an official copy of the Additions which were made to the British Pharmacopœia by the General Medical Council last autumn. It is not, consequently, required of us that we should refer to them more particularly in the way either of criticism or of analytical description. The additions seem to us to be for the most part judicious and called for, but the adoption of a totally new nomenclature in the case of many of the now official organic chemical compounds is to be deplored, even though it may have been necessary. "Acetanilidum" now represents antifebrin, "glusidum" is our sweet friend, saccharin; "Phenazonum" is antipyrin, and nitroglycerine appears as "Trinitrin," or "Glonoin."

The authors of various standard text-books on Materia Medica and Pharmacy have lost no time in issuing supplements to their respective works, in which they give full information about the

additions to the Pharmacopœia. In each case the arrangement of the matter for the most part follows the plan adopted in the case of the original work. Dr. Lauder Brunton considers that it is easier to remember the additions by grouping them together according to their uses. His classification, accordingly, is as follows:—Laxatives, cholagogues and rectal astringents and sedatives; remedies of the aromatic series, narcotics and hypnotics; mydriatics, local anæsthetics and stimulants; remedies acting on the respiratory system; cardiac and vascular remedies; hæmatinics; remedies for the skin and mucous membranes (emollients); an analgesic (menthol); an astringent (eucalyptus gum), and a stimulant (oil of cade). This list gives a good idea of the very important nature of the additions to the Pharmacopœia.

Dr. Roberts considers these additions under the divisions to which they naturally belong, namely—(1) Non-metallic, (2) metallic, (3) organic chemical compounds, (4) vegetable kingdom, and (5) animal kingdom.

Mr. Gerrard's headings are—(1) Sodium salts, (2) magnesium, (3) synthetic products, (4) vegetable products, (5) animal products, (6) pharmacy. His excellent "Supplement" also contains a Table of doses, and one of important strengths.

It will thus be seen that the three publications under review are supplementary to each other to a certain extent. A careful study of all will repay the reader who wishes to make himself thoroughly familiar with the origin, nature, and uses of our new official drugs.

Ointments and Oleates, especially in Diseases of the Skin. By

JOHN V. SHOEMAKER, A.M., M.D., &c. Second Edition.

Philadelphia and London: F. A. Davis. 1890. 8vo. Pp. 298.

THIS is an exhaustive account of the various ointments included in the pharmacopœias of the following countries—United States, Britain, Germany, France, Austria, Italy, Spain, Mexico, and Chili, forming the first part of the book. As in every instance the mode of preparation is fully detailed, the value of the work from a comparative pharmaceutical point of view is obvious. Many curiosities are contained in these—the "dragon's blood" (not so mediæval as the name implies) of the *Unguento di Bolo*, and the *Compound Digestive Ointment* of the Italian pharmacopœia. We may also refer to the "Tinea ointment" of the Spanish, in which soot forms a principal ingredient, and to the Chilian *Ungüento*

nervino, which boasts of no less than twelve components, including rue, fennel, rosemary, mint and sage. The second part is devoted to the therapeutic uses of the oleates, which have hardly yielded in the hands of others the extravagant results claimed for them by the author in his previous writings.

The Mineral Springs of Australia. By LUDWIG BRUCK. Office of the *Australasian Medical Gazette*, Sydney. 1891. Pp. 40.

THERE seems to be no want of springs, both hot and cold, chalybeate and saline, in Australia, and, judging by the analyses, many ought to be of use in the treatment of disease; but up to the present not much has been done to develop their local use, the Clifton Springs being apparently the only ones surrounded with the appurtenances of a "Spa." In many cases, however, the waters are bottled, and are gradually finding their way over the big island.

Antiseptics in Obstetric Nursing. A Text-book for Nurses on the Application of Antiseptics to Gynæcology and Midwifery. By JOHN SHAW, M.D., London. Coloured and plain illustrations. London: H. K. Lewis. 1890. Pp. 129.

Dr. SHAW has produced a readable and useful book on a very important subject, and it deserves to be read, not only by nurses, but by medical men, as, although the teaching he lays down is now generally recognised as correct, there are, we fear, too many practitioners who do not take precautions which are not irksome, and may from time to time prevent loss of life.

Antiseptics in obstetric practice are first dealt with, and the need for their use is shown by some striking statistics. Before their introduction one per cent. of parturient women died in Germany from puerperal fever, and about .60 per cent. in England. Allowing an average of five children to each child-bearing woman, this means that in Germany 1 in every 25 mothers, and in England 1 in 40, died of puerperal fever. It is no wonder that the Litany has a special petition for mercy on all women labouring with child.

A most interesting account is given of the labours of Dr. Semmelweis and Dr. Oliver Wendell Holmes, and the dark page of medical history is unfolded, which records how their demonstration of the carriage of contagion from one case to another was received with hostility, the whole force of the profession being directed to

suppress them. Dr. Semmelweiss died broken-hearted at the age of forty-six; Dr. O. W. Holmes, more fortunate, can, in a ripe old age, see his views receiving universal approval, and thousands of lives annually saved. The scientific, literary, and plucky qualities of Sir Joseph Lister, who triumphed where the others failed, receive due notice.

The recognition of the early symptoms of septic trouble are well described, and the exciting causes discussed, as is the relation between puerperal fever and the exanthemata.

Next comes a chapter on Germs, written in a popular manner, and illustrated with drawings and a striking chromo-lithographed plate representing the tube cultivations.

There is a very good chapter on disinfectants, and chapters on antiseptic precautions in operative gynæcology and midwifery. The latter are admirable, and not carried to the absurd extreme occasionally advocated; every direction is carefully explained and justified.

Short Dictionary of Medical Terms, being an Abridgment of Mayne's Vocabulary. London: J. & A. Churchill. 1891. Pp. 160.

OUR author—his modesty is so great that he has hidden his name from the public view—has succeeded in accomplishing a remarkable feat—he has compiled a short dictionary, which is somewhat amusing reading. It also contains much that is new; we have gained from its persual information we did not previously possess. We are much interested in hearing that there is in ægophony some “argentine” quality; we were unaware that ordinary alum was “Aluminium and Ammonium Sulphate;” we had no idea that an *Arseniate* was a “Combination of *Arsenious* Acid with a base.”

It is interesting to learn what are the most important qualities of albumen. This body is defined as “the mucilaginous substance between the integuments and embryo of seeds; the endosperm or perisperm. A constituent principle in the animal and vegetable kingdoms, indicated by its property of coagulability on application of heat.” Alcohol is “a name for rectified spirits. Ethylic alcohol;” nothing is said about the very numerous other alcohols. Sebaceous means “fatty; suety; applied to glands.” From the punctuation it would appear that the last three words express the meaning of “Sebaceous” just as the former two do. Hæmatin is “bluish-black;” we used to imagine it was brownish in colour.

The author's views on venereal diseases are novel. Gonorrhœa does not properly belong to this class; it is a term "now applied to a discharge of infectious purulent matter from the urethra of males; the vagina, labia, nymphæ, clitoris, and also frequently the mouth and neck of the uterus, and sometimes the urethra, of females." Syphilis, on the other hand, is "the true venereal disease, otherwise termed Lues Venerea, and Morbus Gallicus. A specific contagious non-infectious disease." The non-syphilitic chancre is a thing of the past. A chancre is nothing else except "a sore or ulcer arising from the direct application of the syphilitic poison." Our author does not believe much in the future of Carbolic Acid; it is "an antiseptic and disinfectant in much use *at present*" (the italics are ours).

Our author has increased the value of his work by indicating by means of accents the pronunciation of each word. On this subject he holds original views. Thus we find Bĩ'ceps, Bōra'x, Hēpatitis, Hēlix, Hemiōpia, and sundry other rare and curious methods of pronunciation, which serve to add increased variety to its pages.

Finally, we wonder for what class of readers this work was intended. Practitioners or students of medicine would not gain much information from anything so incomplete. We conclude it must be compiled for that section of the general public who take delight in reading medical publications, and who therein occasionally find words whose meaning they cannot quite comprehend. We rather think it is advantageous for them not to comprehend all they read. Under these circumstances we have much pleasure in recommending this "Short Dictionary of Medical Terms" to the general and unprofessional public who like to dabble in medical works, because we believe it to be incapable of imparting much information to anybody.

What Doctors Say about Alcohol. By the REV. J. W. HORSLEY, M.A., with a Preface by PROFESSOR VICTOR HORSLEY, F.R.S., M.B. London: Church of England Temperance Publication Depôt. 1891. Pp. 24.

AN interesting collection of short sayings of medical men on ten branches of the temperance question. Alcohol and Health, Alcohol and Strength, Alcohol and Nutriment, and Alcohol as a Medicine, are perhaps the most important. Professor Horsley's preface will naturally attract most attention; it is a temperate exposition of his

own view on the subject. Two sentences out of many striking ones may be quoted:—"The alcoholic treatment of disease received a fair trial and has been found wanting." "The effect of a small quantity of alcohol differs only in degree from the injury which they admit is inflicted by a large one, so that the tissues are continually being sapped, however slowly."

Amongst all the opinions quoted none are from the pens of Irish medical men. This reflects, not on our medical writers, but on the narrow limits of the author's reading.

The Poor Man's Help in Sudden Emergencies, with Brief Notes on Accidental Poisoning and What to Do while waiting for the Doctor. By Z. JOHNSON, A.M., *Dubl. Univ.*; L.R.C.P.I., & F.R.C.S.I.; Senior Medical Officer, Kilkenny County Infirmary. New Edition, revised. Kilkenny: printed at the *Moderator* Office, High-street. 1891. Pp. 30.

MANY years ago we signified our approval of this little work, which is intended as a safe guide in accidents and sudden emergencies while awaiting the arrival of the medical adviser. Much might be said both for and against the publication of such a pamphlet, and the placing of it in the hands of either the poor or the rich layman. The high professional and social standing of the author, however, in this instance disarms hostile criticism; and we do not hesitate to say that he has performed his delicate task with equal skill and discretion. A very full Index makes reference a very simple matter, and the advice is given in homely language, easy to be understood by the humble reader. The author has a strong bias against alcohol, "the essence of all brandy, rum, gin, whiskey, &c.," and the *poison* to which he first alludes (page 17). His advice against intemperance is sound—"Above all things, shun intemperance, the most prolific fountain of disease. Put not an enemy into your mouth to steal away your health—it may be your soul" (page 29).

In the preface to the first edition, reprinted with the present issue, obsolete though several of its paragraphs are, we were particularly struck with the following sentences:—

"Having been myself for many years a Dispensary Surgeon, I trust I will be pardoned for offering one word of advice, founded on experience, to my brethren engaged in Dispensary duties. Make it a rule to visit the poor man without any ticket, and make him bring the ticket, to suit

the requirements of the present system, afterwards—all the most successful Dispensary men with whom I have been acquainted followed out this principle—you will thus gain on the affections of the people, and, at the same time, elevate yourselves and your noble profession in public estimation; and it is thus you will be best enabled to overcome vulgar contumacy and unmerited oppression. This is the counsel of one who long fought in the same ranks, and sympathises deeply with your fortunes.”

It would be well if the Dispensary medical officers of Ireland took and acted upon this excellent advice, consonant as it is not only with the dictates of humanity, but also with the principles of the Profession of Medicine.

The trifling cost of this little book—only three pence, we understand—brings it within the reach of everyone. The author’s disinterestedness is evident, for his “Poor Man’s Help” could not possibly be sold at the price named unless at a substantial financial loss.

In his preface to this edition the author says of his work that “in one point it claims originality, inasmuch as it tells ‘what not to do,’ and warns against popular errors and practices, often followed by direful results.”

From this negative side, as well as for its positive merits, we wish Mr. Johnson’s little book all possible success in its useful career.

Davos-Platz, Canton des Grisons, Switzerland; Alpine Resort in Summer and Winter for Tourists and Health-Seekers, with special reference to the Grand Hotel and Pension Belvidere. CHARLES PFEFFER, Geneva. 1891. Pp. 63.

THIS pamphlet advertisement is very well got up, with a large number of illustrations reproduced from photographs, and a large map of the Valley of Davos and neighbouring mountains. A timetable and capital notes of what may be seen *en route*, are also given, as well as the usual descriptions of excursions. Owing to the completion of railway communication Davos is now only 30 hours from London. It is interesting to note the gradual rise of visitors from 2 in 1865-66 to 1,700 in 1889-90.

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.^a

By SIR CHARLES A. CAMERON, M.D., D.P.H., Camb., M.R.C.P.I.;
Ex-President and Professor of Hygiene and Chemistry, R.C.S.I.;
President of the British Public Health Medical Society and of
the Irish Medical Association; Medical Officer of Health for
Dublin; and Hon. Member of the Hygienic Societies of France,
Belgium, Paris, Bordeaux; Examiner in Sanitary Science, Royal
University of Ireland.

ON THE COMPARATIVE HISTOLOGICAL CONSTITUTION AND CHEMICAL COMPOSITION OF COWS', GOATS', ASSES', AND WOMEN'S MILK, AND THE PHYSIOLOGICAL AND HYGIENIC CONCLUSIONS DEDUCED THEREFROM.

THE above interesting matters are discussed at great length by Dr. Béchamp in a memoir read before the Academy of Medicine, Paris. It is the corollary of two previous memoirs; one of these, read seven years ago, was intended to prove that human milk does not contain the same albuminoids as cows' milk, their galactozymes differing. In the second the author contends that the milk globules are real adipose vesicles containing the butter in a menstruum which is not casein, and also that in milk there is a special granular matter which he terms milk microzymes, and which are the cause of the souring and spontaneous coagulation of the milk of cows and goats.

Lactiferous globules and microzymes are the definite and constant elements of the different kinds of milk. The diversity of the various albuminoids and their respective microzymes and molecular granules constitute the physiological and chemical differences in the various milks. Apart from the question: Is casein present in human milk? it must be admitted that butter

^a The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

does not occur in naked globules, but in organised vesicles, and in microzymes, which may also be regarded as vesicles, or rather as cells. Milk is not, therefore, a mere physico-chemical mixture. Instead of using the single term butter, we should say—

Butter in milk globules.

Butter in lactiferous microzymes.

In cows' milk the albuminoids do not exist in a free state, but as alkaline albuminates; therefore for the terms albumen and casein we should substitute the terms—

Caseinate (acid or neutral) of an alkali.

Lactalbuminate of an alkali.

Galactozymosis.

Instead of an emulsion, milk is to be looked upon as a pure secretion from a peculiar source, and not necessary to the life of the individual, or essentially connected with the organ producing it (the mammary gland being capable of existence without exhibiting any functional activity).

The secretion of milk is preceded by the formation of *colostrum*. It has been noticed by Donn  that there is a relation in the abundance and character of the colostrum, before birth, and the abundance and mature character of the milk, produced after birth; the latter may not be perfect until the twentieth day after the birth. It is therefore interesting to note the composition and general nature of the colostrum. M. Clemm has analysed this secretion, taken a month, 17 days, and 9 days, before parturition. In the case of three cows the colostrum was coagulable, and contained from 3 to 8.8 per cent. of what Clemm terms albumen. The sugar varied from 1.7 to 4.3 per cent., and the fats from 0.723 to 4.1 per cent. Two days after birth the secretion was nearly pure milk, and was not coagulable by heat. It contained what is usually regarded as casein, and included a mere trace of albumen. Donn  states that he has discovered in human colostrum granular nucleated corpuscles—as Charles Robin terms them, granular leucocytes. According to Donn  they disappear completely from the fifth to the twentieth day after birth, and in the perfect milk only the lactiferous corpuscles appear.

Cows' milk should be defined as a secretion produced by a change of function in the mammary gland. It consists of a liquid holding in solution potassium and sodium chlorides, caseinates, lactalbuminates of the alkalies, galacto-zymose, milk-sugar, alcohol, and acid matters analogous to the digested products of albuminoids,

and an insoluble solid consisting of *débris* of granular cells, globules and lactiferous microzymes. The phosphates are partly in combination with the albuminates, or integral part of the globules and lactiferous microzymes. Cows' milk, therefore, is constituted as follows:—

Solid Parts.

Milk globules	}	With phosphates in the constitution.
Milk microzymosis		

Liquid Parts.

Latalbuminates	}	Of potassium, sodium, and calcium combined, with another part of the phosphates.
Caseinates		

Galactozymosis.

Modified albuminoids.

Milk-sugar.

Alcohol.

Acetate and chloride of potassium and sodium

Water.

Lehmann has also proved the presence of oxygen, combined and free carbonic acid, and urea in milk.

We are now in a position to understand the object of the comparative study of the subject of Bechamp's Memoirs. Milk is a secretion depending on the condition of the gland secreting it. In order that the milk of a particular kind of animal should be identical with that of the cow—though of course differing perhaps in the percentages of the various constituents—the blood and the tissues and functions of the mammary gland should be similar—that is to say, animals differ less in the nature of their chemical composition, and even of their structure, than in the properties and chemical functions of their anatomical elements. If this be true, then could milks containing some of the organised substances of the gland secreting it, be identical when derived from beings so dissimilar as a ruminant, a pachyderm, and a woman?

The composition of the milk of women, cows, goats, and asses, being very similar in structure, it is not surprising that they should contain lactiferous corpuscles and microzymes very similar in shape, size, and structure. Nevertheless, from a purely physical point of view they differ in so definite a manner that it is possible, by their examination, to differentiate the four kinds of milk. This may be

effected by the action of sulphuric ether. The ether is more soluble in cows' milk than in water, and the inter-action of the ether and milk is progressive, and perfect only after the lapse of several days. Milk collected on the 6th of March, mixed with rectified ether and set aside, behaved as follows :—

Sixth Day, Parts		Eighth Day, Parts		Sixteenth Day, Parts	
Cows' milk,	1,000	Etherised milk,	1,300	Etherised action,	1,350
Rectified ether,	1,000	Free ether,	680	Free ether,	630
<hr/>		<hr/>		<hr/>	
2,000		1,980		1,980	

There is always at first a slight contraction of the mixture. After ten days no further solution takes place, the milk having absorbed more than one-third of the volume of ether. Little by little two layers form in the mixture—the upper is a creamy layer, the lower is well defined, and not creamy. After ten days the proportion was—

Etherised milk, 1,350 parts	}	Etherised cream	-	370 parts
		„ creamless milk	980	„
				<hr/>
				1,350 parts

After ten days' contact the 630 parts of separated ether contained five parts of butter, or only one-ninth of the total furnished by the milk—the etherised cream remaining between the free ether and etherised milk. Comparing these results with those obtained under similar circumstances :—

BEGINNING OF EXPERIMENT		END OF EXPERIMENT					
		GOATS—		ASSES—			
Milk, 1,000 parts	Total etherised milk, 1,566	}	Cream, etherised, 716	Total etherised milk, 1,117	}		
Ether, 1,000 "			Milk, ,, 850				
				Cream, etherised, 67			
				Milk, ,, 1,050			

Goats' milk absorbs more ether than cows' milk, because it contains more fat, and asses' less, because it contains less fat. Not only do they differ with respect to their absorption of ether, but also in the appearance of their etherised cream—that of the goat and cow being very thin, and that of the ass very dense. It is important to notice that the separated etherised milk layer remains opaque in the three cases—goats, asses, and cows—even when shaken up with fresh ether. According to the old view of things the ether ought to take away the fats.

This is due to the fact, revealed by the microscope, that the smallest milk corpuscles do not swell sufficiently for their density

to become less than that of the surrounding etherised liquid. The opacity is due to them and to the milk microzymes.

Etherised Human Milk.

		Three hours standing	24 hours	48 hours	30 days
Milk, 1000	Etherised milk -	1321	1464	1518	1661
Ether, 1000	Ether -	- 652	509	455	312

Proportion between etherised cream and etherised milk :—

Etherised milk	- 1661	Etherised cream	-	822
		Etherised milk under cream	-	839
				<hr/> 1661

The subjacent layer becomes entirely clear, owing to the enormous swelling of the globules and milk microzymes. No precipitate from the liquid takes place, which proves that the belief that calcium phosphate, combined with casein, naturally exists in suspension is erroneous.

Very great differences exist between the various kinds of etherised milk, *minus* the cream. After a period of three summer months the human etherised milk, *minus* cream, remains clear without any precipitate. In the same period the ass's milk, without clotting, clears itself and throws down a precipitate. Under the same conditions cow's and goat's milk behave differently. Goat's milk sours and clots in from 2 to 5 months. Cow's acted similarly in from 4 to 6.

Without entering further into minute details, we pass on to consider the chemical composition of the four kinds of milk :—

Cow's and Goat's Milk.—Both are casein milks, and their almost perfect identity is easily understood when we consider that both animals belong to the class of ruminants. When treated with acetic acid casein separates from cow's and goat's milk; left to natural influences, both milks coagulate and sour. Under similar conditions human and ass's milk sour, but do not curdle.

Human milk resists all the ordinary agents of coagulation—a fact due to the absence of casein. It is, indeed, the diversity of the albuminoids, globules, microzymes, and zymes that constitute the histological, physiological, and chemical distinctive characters of the various kinds of milk.

As to the bearing of the foregoing subjects upon hygiene and

pathology, it has been anticipated by clinical observations. Dr. Tarnier, who has studied the alimentation of new-born infants, places ass's milk in the first rank, after human milk, because it is "nearest to human milk in the proportions of its constituents and their *digestibility*." The reason why ass's milk is so easily digestible is due to the circumstance that it contains no casein.

Why is casein less digestible than the other albuminoids of milk? In judging the effects of the gastric juice of the dog upon pure casein, it was found that it always resulted in the formation of an insoluble compound differing from casein. The gastric juice acted with difficulty upon this substance, and after a time ceased to affect it at all. It is easy to conceive that the same state of things may occur in the stomach of the child. The gastric juice fails to perfectly digest the casein, and an insoluble product is formed which, being indigestible, may cause disturbances of the system.

The precautions to observe when ass's milk is given to infants is to take care that it is perfectly fresh, to give it at its normal temperature, never to over-heat it, and to keep it in an open vessel in a cool place. Boiling ass's milk seriously injures its qualities. The quantity required for use should be gently heated on the water-bath.

When ass's milk is not procurable, should cow's milk be boiled before use? Cow's milk cooked is more easily altered than raw milk. In boiled milk the functions of the microzymes are modified, and they transform the albuminoids of the milk. This would explain the possibility of boiled milk being more easily digested than raw milk by the child. However, the cooking of milk ought to be the exception, not the rule.

The following are the more important conclusions arrived at by the author:—

1. Milk is not an emulsion.
2. The milk globules are vesicles whose membranes are not formed of casein. Human milk globules have thinnest envelopes, ass's the thickest, of the four kinds of milk. Ether causes a greater expansion in human milk than in ass's.
3. The milk globules contain, in addition to butter, a soluble albuminoid.
4. After a certain space of time the lower layers of etherised human milk remain clear, it does not clot. Ass's and goat's milk clots without getting clear.
5. Sugar of milk exists in the four kinds of milk, but in the case of human milk it exhibits certain peculiarities.

6. Human milk has no casein.
7. In human and ass's milk albuminoid matters exist in solution as alkaline lactalbuminates; in cow's and goat's milk the casein and lactalbuminates occur in the same condition—caseinates, &c.
8. The phosphates are in combination.
9. Human milk contains an albuminoid insoluble in ammonium carbonate. In other milk this albuminoid is not found.
10. Human galactozymes powerfully.
11. Human and ass's milk become acid without coagulating.
12. Ebullition of the four kinds of milk alters the lactalbumen and destroys the functions of its galactozymes.
13. As boiling does not kill the germs in the milk of diseased animals, the fresh milk of sound animals should alone be used.
14. Ass's milk is the best substitute for human milk.

DIPHTHERIA IN SALFORD.

Dr. Paget, Medical Officer of Health for Salford, has published a very elaborate and highly illustrated report on the prevalence of diphtheria in Salford. It appears that so far back as thirty years ago there was a very large amount of diphtheria in this town, but the disease declined to a considerable extent until four years ago, when it became again very prevalent, and remains so. Dr. Paget points out, however, that diphtheria has shown a marked tendency to increase in the English towns, as shown by the following table :—

Diphtheria Mortality. Rates per 1,000 of the Population.

	1884	1885	1886	1887	1888	Mean	1889
England and Wales	0·19	0·15	0·14	0·15	0·17	0·16	0·19
Twenty-eight Large Towns	0·17	0·17	0·16	0·18	0·21	0·18	0·26
London	0·24	0·22	0·20	0·23	0·30	0·24	0·37
Salford	0·12	0·009	0·06	0·10	0·29	0·13	0·97

The rate in Salford for 1889 is enormous—9·7 per 10,000 persons living. In Dublin the mortality from this disease is trifling. The deaths from it during the last 10 years were in the ratio of 8 per 100,000 persons living.

The mortality statistics of Salford show that diphtheria has never been absent from it in any year during the past thirty.

In 1883, a local Act enforced notification of infectious diseases in Salford, and that year 81 cases of diphtheria were notified to the Sanitary Authority. In the following year the number rose to 99, but fell to 54 in 1885. In 1886 the cases notified numbered 42;

in 1887, 83; in 1888, 176; in 1889, 691; and in 1890, 694. In 1890, there was not a single week in which no cases were notified. The minimal number in a week was 3, the maximal 29; 207 of the 694 cases reported in 1890 terminated fatally. Dr. Paget considers the conditions which may have had an influence on the development and maintenance of diphtheria in Salford. As to the contagion of the malady being propagated through the agency of milk, the evidence was negative. The disease seems to have been largely spread by school children—amongst whom, too, it was relatively most prevalent. There are 73 schools in the town, affording instruction to 35,020 pupils; but Dr. Paget did not deem it advisable to recommend the closure of more than two schools.

It seems that in Salford many houses have been built upon “tip land”—*i.e.*, ground formed of refuse of various kinds. Although such sites for building on must be regarded as thoroughly bad, yet Dr. Paget was not able clearly to prove that the persons who lived on them suffered more from diphtheria than the inhabitants of other parts of the town.

The sewers of Salford do not seem to be in every respect perfect, many of them having large deposits in them, owing to the subsidence of the ground after the sewers had been formed. The house drains were in many cases also found defective in reference to their levels. Dr. Paget says that he is not able to speak of the condition of the drains of any considerable number of the houses in which the disease appeared; but that whenever he did inspect such a house he invariably found a “condition of things which facilitated the entrance of sewer gases into the houses.” I am glad to find that Dr. Paget is in favour of the water-carriage of excreta. He recommends “that the nuisance arising from the existing midden-privy system be abated by such structural alterations as will secure dryness of contents of the middens, and the severance of connection between them and the drains (no such connection is permitted in Dublin), and that all closets erected in the future be water-closets.”

PRECAUTIONS TO PREVENT THE SPREAD OF DIPHTHERIA.

Dr. Löffler, who claims to have discovered the bacillus of diphtheria, has published a paper^a on the precautions which should be taken to prevent the spread of that disease. He begins by stating that the bacillus is confined to the affected part and the diseased products of that part, and that “it does not occur in the blood

^a *Berliner klinische Wochenschrift.* 1890. Nos. 39 and 40.

vessels or internal organs." With the view of ascertaining the length of time the bacillus can exist and develop itself in the mouth and throat, Löffler daily cultivated specimens of the mucus taken from diseased parts. He found that a convalescent from the disease of three weeks' standing, and whose temperature was quite normal, was not free from virulent bacilli. He concludes, therefore, that it is not safe for persons affected with diphtheria to mix with healthy persons at an earlier date than eight days after the disappearance of all the symptoms of the disease. This precaution is specially insisted upon in the case of school-children.

Löffler's researches as to the period of time the bacillus of diphtheria can exist outside the human body are interesting. He cultivated dried fragments of diphtheritic membrane, and found that up to the fourteenth week colonies of bacilli could be developed from them. After that time, however, the cultivation gave uncertain results. He succeeded in preserving the bacillus in an active state for five months. It can exist and develop in milk—an important fact, which proves that milk from any dairy in which diphtheria occurs should not be used. There is some evidence to show that in these countries diphtheria is spread occasionally through the medium of infected milk.

According to Löffler the affections in horses, asses, pigs, calves, and fowl, which resemble diphtheria of men, are not in reality identical with the latter, as some physiologists assume. As to cats, he found that they could be fed with impunity on milk containing the bacilli of diphtheria; but if the bacilli were injected subcutaneously into the animals they invariably died. On this point Löffler and Klein are at variance. MM. E. Roux and A. Yersin, in their Memoir on the Study of Diphtheria in the 4th Volume of the *Annales de l'Institut Pasteur*, also state that the bacilli of the disease remain for a long time in the mouth of the convalescent, who should not mix with the general population for a sufficient time.

Diphtheria is a disease which seems to excite great interest amongst pathologists and bacteriologists. Dr. Behring, in the number of the *Deutsche Medicinische Wochenschrift* for December 11th, 1890, gives the results of his researches as to conferring immunity on animals against diphtheria. He says that a subcutaneous injection of a ten per cent. solution of peroxide of hydrogen acidulated with sulphuric acid protected rabbits and guinea-pigs against infection of diphtheria. Trichloride of iodine also acted as a preventive.

The amount of hydrogen peroxide used was very small—namely, 0·5 cubic centimetres. Rabbits are very sensitive to this compound. Several experimented upon died when treated with 1 cc. of the solution—a quantity in the ratio of only 1 per 75,000 parts by weight of the animal. Naphthylamine, chloride of sodium and gold, carbolic acid, and other agents were used, but were inferior to the peroxide of hydrogen and iodine trichloride.

One way of conferring immunity on animals is to inject into them the products elaborated by the action of the diphtheria bacillus. The animal is infected and then treated therapeutically, and usually recovers. This seems to be a Pasteurian method.

According to Behring there is not as yet a known prophylactic for the diphtheria of man.

BORIC ACID, &C., AS FOOD PRESERVERS.

A few months ago a person who sold milk, which had been deprived of part of its cream, and which contained some boric acid, was heavily fined by a London magistrate. The fine was imposed, partly on account of the debasement, partly because of the presence of boric acid. This substance, with or without its sodium salt (borax), and salicylic acid are largely employed in the preservation of cream and other readily perishable articles of food. In some countries the nature of food-preservatives is inquired into by the authorities, and such of them as might be prejudicial to health is prohibited. In Berlin no preservative of any kind is allowed to be put into milk. In Holland salicylic acid as a preservative is interdicted, though previously it was largely used, especially in beer. In France, salicylic acid is not allowed to be used; and in Spain and Italy, preservatives other than alcohol are not permitted to be added to wines. In these countries, bisulphites are frequently used to keep beer from becoming sour, and the practice seems to have had some sort of official recognition by the Excise authorities. As to the effects of the continuous use of boric acid, borax, and salicylic acid upon health, opinion is divided, but the weight of it is against their use. The medical dose of boric acid is from 5 to 30 grains for an adult, and 2 or 3 grains for a child. From 5 to 12 grains of boric acid and mixtures of borates are added to a pint of milk; a child using a pint of milk would, therefore, take a big dose of the antiseptic. It may be that these bodies do not affect one's health when used in the proportions in which they are found in food; but it seems irrational to suppose that compounds which

prevent the evolution of organisms, and arrest chemical changes in organic bodies, would have no influence upon the processes of digestion. The whole subject of the use of antiseptics in food ought to be carefully considered by a Parliamentary Committee. If such a Committee, on taking evidence, came to the conclusion that certain antiseptics were undesirable additions to our everyday food, then their use ought to be strictly prohibited.

IS MEAN ANNUAL TEMPERATURE DECLINING?

The eminent French meteorologist, M. Camille Flammarion, has recently announced that his studies of temperature have convinced him that the mean annual temperature of Paris has for some years past been below the normal point. This assertion has been questioned by several *savants*, particularly by M. Mascart; but it has been accepted by several eminent meteorologists. In the *Journal d'Hygiène*, May 14th, 1891, the following tables are given:—

Park of St. Maur, Paris.

Year	Mean Temperature Centigrade	Difference
1885	10·32°	+ 0·2°
1886	10·25°	+ 0·1°
1887	8·81°	— 1·3°
1888	8·88°	— 1·2°
1889	9·48°	— 0·6°
1890	9·32°	— 0·8°

The mean normal temperature for Park St. Maur was 10·2° C., and that of Paris 10·8° C. It was not the exceptionally low temperature of one or two months which caused the decline of the annual temperature, for nearly all the months exhibited a decline of temperature.

The astronomer at the Royal Observatory, Brussels, has observed a decline of temperature in that city, as shown by the following table:—

Year	Mean Temperature	Difference
1885	10·6°	+ 0·3°
1886	10·5°	+ 0·2°
1887	9·4°	— 0·9°
1888	9·4°	— 0·9°
1889	9·8°	— 0·5°
1890	9·6°	— 0·7°

The mean annual temperature of the Observatory at Brussels is 10·3 C. Observations made by M. Naudin at Antibes, and by M. Leotard at Marseilles, confirm the statements made by Flammarion. Finally, Mr. William Ellis, of the Greenwich Observatory, states that all the meteorological stations of Great Britain show reduced temperatures.

At the Observatory of the Ordnance Survey Office in the Phoenix Park, Dublin, the mean temperature for the 10 years ended 1889 was 47·9° F. In 1890 the mean temperature was 48·3° F. The following shows the mean temperature for each year from 1880 :—

Year	Temperature	Year	Temperature
1880	48·1°	1886	47·2°
1881	47·2°	1887	47·5°
1882	48·2°	1888	47·2°
1883	47·5°	1889	48·1°
1884	48·6°	1890	48·3°
1885	49·6°		

VITAL STATISTICS OF THE PEABODY BUILDINGS AND OTHER BLOCKS OF LABOURERS' DWELLINGS.

At the meeting of the Statistical Society on February 17th, 1891, Dr. A. Newsholme, Medical Officer of Health for Brighton, read a paper on the above subject. The statistics relative to the Peabody Buildings deal with a population of 20,462 persons, and those referring to the dwellings of the Improved Industrial Tenements Dwellings affect a population of 5,388. The death statistics of the Peabody Buildings are very reliable, because they were collected from the registrars of deaths, and not from the superintendents of the buildings, who might, perhaps, be supposed to have an interest in minimising the death-rate.

It appears that in the Peabody Buildings there are 169 per 1,000 persons under five years old; whilst in all London the proportion is 131; 150 per 1,000 are of the ages between 5 and 10, as compared with 150 in London. Nearly the same differences exist at the ages 10 to 15, but between 15 and 25 years of age the proportions are reversed. From 25 to 55 the proportion per 1,000 of all ages holds good equally for the Peabody Buildings and London, but after 55 there is a smaller proportion in London. The recorded death-rates in English towns is "corrected" by factors deduced from the distribution of age and sex. The rate of mortality is greater amongst

men than amongst women, and it varies at different ages. In the towns, as a rule, the population contain a larger proportion of persons of the ages at which there is the least mortality, as compared with the country at large. The mere death-rate of a town cannot be taken as an index to its sanitary condition until correction has been made for sex and age distribution. These corrections must also be applied to blocks of dwellings like those of the Peabody Trust. The factor for correcting the death-rate in London is 1·0615, and that for correcting the Peabody Buildings population is 1·0391. It follows from this that the age and sex distribution in the Peabody Buildings is not so favourable as in the case of the whole population of London. Naturally, therefore, we should expect a higher rate of mortality in these buildings than in London at large, but as against this we set off the fact that the inhabitants of the buildings are respectable, well-behaved persons—dirty, drunken, disorderly, and ill-conditioned persons being excluded. Amongst the latter classes we may fairly expect a higher death-rate than is the case of better-ordered sections of the community. During the five years—1886–90—the birth rate in the Peabody Buildings was in the annual ratio of 40·24 per 1,000 persons; in the dwellings of the Metropolitan Association 32·98, and in the Improved Industrial Dwellings 35·21, as compared with 30·81 for the whole of London.

The following table shows the death-rates for a period of sixteen years:—

	1874–80	1881–5	1886–9
London - - -	22·41	20·60	19·11
Peabody Buildings - -	20·53	18·59	18·79
Improved Industrial Dwellings —	—	—	12·46
Dwellings of Metropolitan Association—	—	—	15·74

Great care was taken to ascertain the number of deaths of persons who had resided in the Peabody Buildings in hospitals, &c., and to include them in the death-roll of the buildings. During the three years—1888–90—it was found that 16·3 per 1,000 of the tenants of the Peabody Buildings died in public institutions. The “corrected” death-rate in the Peabody Buildings show that it is about 2 per 1,000 lower than the rate for all London. In the case of the Improved Industrial Tenements Dwellings the deaths of its inmates in public institutions were not ascertained; but, no doubt, about 16 per cent. of the deaths occurred in those institutions. In the dwellings of the Metropolitan Association the deaths of the tenants in hospitals, &c., seem not to be wholly accounted for.

The death-rate amongst males was lower than the rate in London, whilst with regard to females the converse was the case. Dr. Newsholme explains this on the supposition that a large number of charwomen, needlewomen, and other women of impoverished means, reside in the Peabody Buildings.

As to infantile mortality, the deaths of children under one year in the Peabody Buildings were during the nine years 1882-90 at the rate of 139·2 per 1,000 births; in London the rate was 151·9. During the five years, 1886-90, it averaged 121 per 1,000 births in the dwellings of the Metropolitan Association, and 130 in the Improved Industrial Dwellings. The lower rates in the two last-named dwellings is, no doubt, due to deaths in public institutions not being fully accounted for.

With respect to deaths from zymotic diseases, Dr. Newsholme brings out some interesting facts. The death-rate due to typhoid fever is about one-half less than in London, showing a good state of things with regard to sanitary accommodation, drainage, and water supply. The diarrhoea death-rate is somewhat lower than in London. It is noteworthy that measles and whooping-cough cause a higher death-rate in the Peabody Buildings than in London. This is due to the greater readiness with which the contagion of these diseases is spread from person to person in blocks of buildings, the separate tenements of which are imperfectly isolated. As to diphtheria, this disease is more rife in the Peabody Buildings than in London. As diphtheria, like typhoid fever, is usually connected with bad drainage, it seems strange that one of these maladies should be greater than in London and the other less. Perhaps this is due to the fact that diphtheria is readily propagated from person to person, which is not the case with typhoid fever. In Dublin I have observed that scarlet fever, measles, whooping-cough, and typhus fever are more prevalent in the large tenement houses than in small houses and cottages.

With respect to open space, the area of the site of the Peabody dwellings is covered to the extent of 42·6 per cent. by buildings; the rest is open space. The rooms in the buildings number 11,275; of the total number of tenements (5,071), 76 were of four rooms, 1,790 of three, 2,396 of two, and 809 of a single room. The 7,013 bedrooms were occupied by nearly three persons per room, each person having an average of 380 cubic feet. In Dublin 32,000 families occupy on the average $1\frac{1}{2}$ rooms per family.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.R.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF SURGERY.

President—H. G. CROLY, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—MR. W. THORNLEY STOKER.

Friday, May 15, 1891.

The PRESIDENT in the Chair.

Operations on the Thyroid Gland.

SIR WILLIAM STOKES read a paper on "Operations on the Thyroid Gland." [It will be found at page 1.]

The PRESIDENT spoke of the great importance of the cases detailed, and considered the Society was indebted to Sir William Stokes for having brought the subject under notice, and also for reporting unfavourable as well as favourable cases. The President related a case which occurred in his private practice—a cystic growth. The venous hæmorrhage was so severe that he almost gave up the case in the midst of the operation, but ultimately he removed the entire growth, and the patient recovered. The President mentioned two cases which he saw operated on, and the venous hæmorrhage was very alarming. He also mentioned that in his experience, interfering with the cervical fascia, as in tracheotomy, symptoms of collapse often set in. The President said he did not like operating on thyroid tumours in cases of deformity only.

MR. THORNLEY STOKER said he had listened with great interest to the thoughtful paper of Sir William Stokes, and as he had had the advantage of assisting him at most of his operations, he could endorse all he had said as to the difficulties and dangers common to most thyroidec-

tomies. He stated that he had operated on a number of cases, having divided the isthmus in two and removed one lobe of the gland in others. He had come, as the result of his study of cases of other surgeons and of his own, to tolerably definite conclusions as to this operation, which he summarised as follows:—1st. That it was a proceeding of extreme gravity to remove even a part of the thyroid, as no one could be sure beforehand but that he might, even in an apparently simple case, have to encounter the most fearful hæmorrhage. 2nd. That in view of the subsequent occurrence of myxœdema, the removal of the entire gland was not justifiable unless a graft of the gland was then or subsequently inserted in some other part of the body—a proceeding which seemed to be one of much promise. 3rd. That the division of the isthmus did not seem to produce much good, except such mechanical relief as it afforded to the trachea or other structures it may have pressed upon. 4th. That the operation of thyroidectomy was too grave a one to be undertaken for mere cosmetic purposes. 5th. That undoubtedly, as in cases of his own, removal of half the gland had been followed by shrinkage of the remaining enlarged portion.

MR. LENTAIGNE fully endorsed Sir W. Stokes' account of the danger from hæmorrhage during operation on the thyroid gland. He had performed Sydney Jones' operation in one case in which the isthmus practically consisted of a middle lobe separated from the lateral lobes by a shallow furrow on each side. He had with great difficulty succeeded in getting a silk ligature around the isthmus in the furrow on each side, and after tightening the ligature he removed the entire isthmus with the small middle lobe between the furrows. The operation was most difficult, and lasted several hours. The veins seemed to be of the thinnest, bleeding freely almost on the slightest touch. The result was most satisfactory, as both lateral lobes had since almost entirely disappeared. The patient had been operated on 18 months before, and he hoped soon to be able to exhibit the case at the Surgical Section. The operation had been performed to relieve extreme dyspnœa, and was very satisfactory. He was much interested in the account of the operations on exophthalmic goître, which seemed to open a new era in the treatment of this disease.

MR. M'ARDLE remarked that everyone who has removed a diseased thyroid must agree with Sir W. Stokes that hæmorrhage is usually very great. He then mentioned a case of his in which very copious hæmorrhage arose from a tearing of a thyroid vein close to the internal jugular. Ligature was applied, while the index and middle finger compressed the jugular. Mr. M'Ardle then mentioned that of six cases one died, being one in which a process of the tumour passed deep into the mediastinum. He called attention to the fact that in the cases of resection of the entire or part of the gland which came under his observation, collapse occurred whenever traction was made on the mass, and which he supposed was

due to stretching of the cardiac nerves. This collapse was on all occasions relieved by replacing the tumour. Mr. M'Ardle contended that thyroidectomy should not be carried out merely for the removal of deformity. He remarked that in resection of the isthmus the ligatures should be slowly drawn and the section made some distance therefrom.

SECTION OF MEDICINE.

President—J. MAGEE FINNY, M.D.; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. MONTGOMERY, M.R.C.P.I.

Friday, May 22, 1891.

The PRESIDENT in the Chair.

Treatment of Chronic Eczema by Creolin.

DR. PATTESON read a note on the treatment of chronic eczema by creolin. [It will be found at page 16.]

DR. WALTER SMITH expressed his concurrence with Dr. Patteson's views as to the utility of creolin as a germicide and stimulant. Creolin, although devoid of ordinary phenol, is a mixture of phenolic compounds and other aromatic bodies, and possesses the advantages of ready miscibility with water, and of being unirritating.

MR. DOYLE said that he could corroborate Dr. Patteson's remarks as regards the curative effect of creolin in subacute cases of pustular eczema, having used it by means of wet packs frequently repeated.

MR. R. MONTGOMERY said that creolin is supposed to be naphthalene combined with carbolic acid, and an alkali, but he was unable to obtain more accurate observation as to its chemical constitution.

The PRESIDENT congratulated the Academy on the additional remedy for chronic eczema which Dr. Patteson had brought under their notice. His communication, however, did more, and that was, that it emphasised the importance of steady perseverance in the treatment for eczema, which had been found temporarily useful. If any exception could be taken to the paper it was in the direction (1) that the treatment was used for but one variety of chronic eczema—viz., the pustular; and (2) that creolin was not the only remedy employed.

DR. PATTESON replied.

The Ætiology of Cheyne-Stokes' Respiration.

DR. M. A. BOYD read a paper on the ætiology of Cheyne-Stokes' respiration. [It will be found at page 9.]

DR. LITTLE thought Dr. Boyd's observation as to the difference between the length of inspiration and expiration during the two periods of the Cheyne-Stokes' respiration was a novel one, and well worthy of further attention. If the inhalation of oxygen gives relief, it would, Dr. Little thought, demolish the theory which he (Dr. Little) had formerly put forward as to the causation of ascending and descending respiration.

DR. CRUISE observed that, apart from the cases of organic disease of the heart and arterial system in which Cheyne-Stokes' respiration exists, it also may be seen in certain cases of fever, of which he gave a marked example—the symptom ceasing with the fever. He further bore witness to the value of oxygen inhalation and of using ozone papers in this state.

DR. WALLACE BEATTY has not observed any difference in the pulse during the periods of apnoea and respiration.

DR. WALTER SMITH pointed out the great variety of conditions under which Cheyne-Stokes' respiration is observed, not invariably of a morbid sort, but occasionally even during normal sleep. Hence any explanation of its mode of production should not be restricted to any particular set of phenomena, cardiac or otherwise, with which it is sometimes associated, but should be of a more general nature. In the present state of knowledge it is difficult to propose a satisfactory theory of this curious form of dyspnoea. The chief problem appears to be to determine how far the phenomenon is related—(a) to a direct disturbance of the nutrition of the respiratory centre, and (b) to the influence of inhibitory stimuli acting upon the respiratory centre. Cheyne-Stokes' respiration is occasionally observed after a hypodermic dose of morphin, and is increased, in pathological states, by a dose of a narcotic, and the disturbed rhythm can sometimes be checked by a powerful sensory stimulus such as flexion of the great toe.

DR. FALKINER thought that Dr. Boyd laid down too strict a limit for the pathological condition of the heart that produces the condition of Cheyne-Stokes' respiration, pointing out that Dr. Boyd could not verify it in his own case, which recovered. He pointed out that the ozone papers alluded to by Dr. Cruise were misnamed, as a process of combustion of a carbonaceous material could not produce ozone.

MR. DOYLE also spoke.

DR. BOYD, in reply, said he was glad to see Dr. James Little taking part in the discussion, as Dr. Little's well-known explanation of this phenomenon was in his (Dr. Boyd's) opinion the most rational of all the theories offered. If Dr. Little tries, in the next case of Cheyne-Stokes' respiration he meets with, the inhalation of oxygen, he will be pleased with the result. Dr. Cruise's case, arising in the course of fever, would indicate that there was poisoning of the respiratory centre from the condition of the blood, in which there was also the cardiac addition of probably febrile degeneration of its muscle. In all the cases observed by Dr.

Boyd there was marked irregularity in the rhythm of the pulse. The view expressed by Dr. Smith, that it was not a phenomenon that could be ascribed to the heart more frequently than to any other portion of the respiratory apparatus, seemed rather against the weight of evidence, as few writers on this subject have called attention to this form of respiratory distress except in conjunction with some form of cardiac disease or alteration. The form of using the oxygen was by allowing the compressed oxygen in metal tubes to run into an ordinary air-tight bag, to which an inhaler, to be worn over the face, was attached, the escape of oxygen from the bag being facilitated by pressure from time to time.

PATENTS IN MEDICINE.

DR. JOHN S. BILLINGS, of the United States Army, writes on "American Inventions and Discoveries in Medicine, Surgery, and Practical Sanitation," in the *Boston Medical and Surgical Journal* (April 9, 1891). As regards medicine, he says that only one complete system has been patented in the United States. In 1836 a patent was granted to "Thomsonianism," or the "steam-cayenne-pepper-and-lobelia system." The right to practise this ism, with a book describing its method, was sold for twenty dollars. It made a profound impression on Dr. Billings, who, in early youth, took a dose of "Number Six"—a concentrated tincture of cayenne pepper—which was, he states, "enough to make a boy go to school for a month." Up to 1849, 86 patents for medicines had been granted. The decade 1850–60 was the most prolific of these monstrous births, but the total for 1880–90 was 540; but this figure does not at all represent the American delight in secret remedies. "This," says Dr. Billings, "applies only to 'patent medicines,' properly so-called, the claims for which are, for the most part, presented by simple-minded men who know very little of the ways of the world. A patent requires a full and unreserved disclosure of the recipe, and the mode of compounding the same, for the public benefit, when the term of the patent shall have expired; and the Commissioner of Patents may, if he chooses, require the applicant to furnish specimens of the composition and of its ingredients, sufficient in quantity for the purpose of experiment. The law, however, does not require the applicant to furnish patients to be experimented on, and this may be the reason why the Commissioner has never demanded samples of the ingredients. By far the greater number of the owners of panaceas and nostrums are too shrewd to thus publish their secrets, for they can attain their purpose much better under the law for registering trademarks and labels, designs for bottles and packages, and copyrights of printed matter, which are less costly and do not reveal the arcanum. These proprietary medicines constitute the great bulk of what the public call 'patent medicines.'"

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;
F. R. Met. Soc.; Diplomat in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, May 23, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	May 2.	May 9.	May 16.	May 23.		May 2.	May 9.	May 16.	May 23.
Armagh -	20·7	15·5	10·3	10·3	Limerick -	14·8	22·9	21·6	24·3
Belfast -	29·8	29·1	21·3	23·5	Lisburn -	29·0	43·5	14·5	24·2
Cork -	18·8	24·7	17·5	19·5	Londonderry	23·2	25·0	25·0	23·2
Drogheda	29·6	25·4	33·8	16·9	Lurgan -	20·5	41·0	10·3	25·7
Dublin -	23·6	26·3	24·5	20·4	Newry -	10·5	38·6	14·0	21·1
Dundalk -	26·2	30·6	34·9	17·5	Sligo -	9·6	28·9	24·1	19·2
Galway -	30·3	26·9	23·5	33·6	Waterford -	41·7	20·8	23·2	30·1
Kilkenny	16·9	21·1	59·2	16·9	Wexford -	25·7	34·2	17·1	8·6

In the week ending Saturday, May 2, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 23·3), was equal to an average annual death-rate of 26·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·1 per 1,000. In Glasgow the rate was 27·7, and in Edinburgh it was 16·4.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 24·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in nine of the districts to 23·2 in Waterford—the 18 deaths from all causes registered in that district comprising 10 from whooping-cough. Among the 134 deaths from all causes registered in Belfast are 1 from typhus, 2 from whooping-cough, 1 from simple continued fever, 2 from

enteric fever, and 2 from diarrhœa. The 9 deaths in Galway comprise 2 from whooping-cough, and the 6 deaths in Lisburn comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 210—101 boys and 109 girls; and the registered deaths to 165—68 males and 97 females.

The deaths, which are 31 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·4 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 23·6 per 1,000. During the first seventeen weeks of the current year the death-rate averaged 29·3, and was 2·7 under the mean rate in the corresponding period of the ten years 1881—1890.

Thirteen deaths from zymotic diseases were registered, being 5 over the very low number for the preceding week, but 11 under the average for the 17th week of the last ten years. They comprise 1 from typhus, 1 from influenza (complicated with pneumonia), 2 from enteric fever, 2 from diarrhœa, and 1 from erysipelas.

Four cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week but 1 under the number for the week ended April 18. Five enteric fever patients were discharged, and 33 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 2 cases of measles and 1 case of typhus, but no cases of scarlatina were received. Seven cases of measles, 5 cases of typhus, and 1 case of scarlatina remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 38 for the week ended April 18, to 32 for the following week, further declined to 28, or 14 below the average for the corresponding week of the last ten years. The 28 deaths consist of 19 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 9, the mortality in twenty-eight large English towns, including London (in which the rate was 24·0), was equal to an average annual death-rate of 28·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·9 per 1,000. In Glasgow the rate was 29·3, and in Edinburgh it was 22·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 27·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in eight of the districts to 10·3 in Lurgan—the 8 deaths from all causes

registered in that district comprising 2 from whooping-cough. Among the 131 deaths from all causes registered in Belfast are 1 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 1 from enteric fever, and 3 from diarrhœa. The 17 deaths in Limerick comprise 1 from typhus and 1 from whooping-cough.

In the Dublin Registration District the registered births amounted to 213—111 boys and 102 girls; and the registered deaths to 179—95 males and 84 females.

The deaths, which are 13 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·4 in every 1,000 of the estimated population. Omitting the death of one person admitted into hospital from without the district, the rate was 26·3 per 1,000. During the first eighteen weeks of the current year the death-rate averaged 29·1, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Seventeen deaths from zymotic diseases were registered, being 4 over the number for the preceding week, but 2 under the average for the 18th week of the last ten years. They comprise 4 from whooping-cough, 1 from enteric fever, 1 from diarrhœa, and 1 from erysipelas.

Five cases of enteric fever were admitted to hospital, being 1 over the admissions for the preceding week and 3 over the number for the week ended April 25. Thirteen enteric fever patients were discharged, and 25 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 6 cases of measles (an increase of 4 as compared with the number for the preceding week), 1 case of scarlatina, and 4 of typhus. Thirteen cases of measles, 2 of scarlatina, and 9 of typhus, remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 32 for the week ended April 25, to 28 for the following week, further declined to 26, or 17 below the average for the corresponding week of the last ten years. The 26 deaths comprise 11 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 16, the mortality in twenty-eight large English towns, including London (in which the rate was 26·1), was equal to an average annual death-rate of 30·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·1 per 1,000. In Glasgow the rate was 28·4, but in Edinburgh it was only 22·7.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 22·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·0 per 1,000, the rates varying from 0·0 in twelve of the districts to 8·5 in Kilkenny—the 14 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 96 deaths from all causes registered in Belfast are 1 from small-pox (an unvaccinated person), 2 from whooping-cough, 3 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 179—88 boys and 91 girls; and the registered deaths to 173—73 males and 100 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·5 in every 1,000 of the estimated population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 24·5 per 1,000. During the first nineteen weeks of the current year the death-rate averaged 28·9, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 12 deaths from zymotic diseases were registered, being 5 under the number for the preceding week, and 7 below the average for the 19th week of the last ten years. They comprise 2 from influenza (complicated in one case with bronchitis) 5 from whooping-cough, 1 from diphtheria, and 1 from enteric fever.

Four cases of enteric fever were admitted to hospital, being 1 under the admissions for the preceding week. Five enteric fever patients were discharged, and 24 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The hospital admissions include, also, 3 cases of measles (a decrease of 3 as compared with the number for the preceding week) and 1 case of typhus; 12 cases of the former and 5 of the latter disease remained under treatment in hospital on Saturday.

Twenty-eight deaths from diseases of the respiratory system were registered, being 2 over the number for the preceding week, but 9 below the average for the 19th week of the last ten years. The 28 deaths comprise 13 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 2 from pleurisy.

In the week ending Saturday, May 23, the mortality in twenty-eight large English towns, including London (in which the rate was 25·9), was equal to an average annual death-rate of 28·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·8 per 1,000. In Glasgow the rate was 26·5, and in Edinburgh it was 23·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in nine of the districts to 4·8 in Lisburn—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 106 deaths from all causes registered in Belfast are 1 from small-pox (an unvaccinated person), 1 from whooping-cough, 1 from simple continued fever, 2 from enteric fever, and 5 from diarrhœa. The 13 deaths in Londonderry comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 149—80 boys and 69 girls; and the registered deaths to 141—77 males and 64 females.

The deaths, which are 35 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·8 in every 1,000 of the estimated population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 20·4 per 1,000. During the first twenty weeks of the current year the death-rate averaged 28·5, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 8 deaths from zymotic diseases were registered, being 14 below the average for the corresponding week of the last ten years, and 4 under the low number for the week ended May 16. They comprise 1 from influenza (complicated with pneumonia), 2 from whooping-cough, and 2 from enteric fever.

Only 3 cases of enteric fever were admitted to hospital, being 1 under the admissions for the preceding week and 2 under the number for the week ended May 9. Ten enteric fever patients were discharged, and 17 remained under treatment on Saturday, being 7 under the number in hospital at the close of the preceding week.

Five cases of measles were admitted to hospital against 3 in the preceding week and 6 in the week ended May 9. The hospital admissions include, also, 2 cases of scarlatina, but no case of typhus was received. Seven cases of measles, 4 of scarlatina, and 5 of typhus remained under treatment in hospital on Saturday.

Forty-two deaths from diseases of the respiratory system were registered, being 14 over the number for the preceding week and 10 in excess of the average for the 20th week of the last ten years. They comprise 25 from bronchitis and 14 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of May, 1891.*

Mean Height of Barometer,	-	-	-	29·799 inches.
Maximal Height of Barometer (on 12th, at 9 a.m.),				30·293 „
Minimal Height of Barometer (on 1st, at 9 a.m.)	-			29·237 „
Mean Dry-bulb Temperature,	-	-	-	49·5°.
Mean Wet-bulb Temperature,	-	-	-	46·2°.
Mean Dew-point Temperature,	-	-	-	42·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·275 inch.
Mean Humidity,	-	-	-	77·8 per cent.
Highest Temperature in Shade (on 12th)	-			67·8°.
Lowest Temperature in Shade (on 18th),	-			32·8°.
Lowest Temperature on Grass (Radiation) (on 18th),				27·3°.
Mean Amount of Cloud,	-	-	-	63·4 per cent.
Rainfall (on 17 days),	-	-	-	2·792 inch.
Greatest Daily Rainfall (on 28th),	-	-	-	·600 inch.
General Directions of Wind,	-	-	-	N.W., N.E.

Remarks.

May, 1891, was cold for the most part, showery, and unsettled, with an overwhelming prevalence of “polar” winds and frequent falls of hail. On the 16th and 17th, snow, sleet, and hail fell in most parts of the British Islands. Only in the period from the 10th to the 13th inclusive was there anything like summer heat.

In Dublin the arithmetical mean temperature (49·6°) was decidedly below the average (52·0°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 49·5°. In the twenty-six years ending with 1890, May was coldest in 1869 (M. T. = 48·2°), in 1885 (M. T. = 48·7°), and in 1879 (the “cold year”) (M. T. = 48·8°). It was warmest in 1868 (the “warm year”) (M. T. = 55·8°) and 1875 (M. T. = 54·9°). In 1886 the M. T. was 50·5°, in 1887 it was 51·8°, in 1888 it was 52·5°, in 1889 it was 54·6°, and in 1890 it was 53·2°.

The mean height of the barometer was 29·799 inches, or 0·190 inch below the corrected average value for May—namely, 29·989 inches. The mercury rose to 30·293 inches at 9 a.m. of the 12th, and fell to 29·237 inches at 9 a.m. of the 1st. The observed range of atmospherical pressure was, therefore, 1·056 inches—that is, a little less than an inch and one-tenth.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 49·5°, or 4·1° above the value for April, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.* — *Min.* × ·47), the value was 49·2°, or 2·4° below the average mean tempera-

ture for May, calculated in the same way, in the twenty-five years, 1865–89, inclusive ($51\cdot6^{\circ}$). The arithmetical mean of the maximal and minimal readings was $49\cdot6^{\circ}$, compared with a twenty-five years' average of $52\cdot0^{\circ}$. On the 12th, the thermometer in the screen rose to $67\cdot8^{\circ}$ —wind, E.N.E.; on the 18th the temperature fell to $32\cdot8^{\circ}$ —wind, N.E. The minimum on the grass was $27\cdot3^{\circ}$, on the 18th.

The rainfall amounted to 2·792 inches, distributed over 17 days. The average rainfall for May in the twenty-five years, 1865–89, inclusive, was 2·030 inches, and the average number of rainy days was 15·4. The rainfall and the rainy days, therefore, were above the average. In 1886 the rainfall in May was very large—5·472 inches on 21 days; in 1869 also 5·414 inches fell on 19 days. On the other hand, in 1871, only ·378 of an inch was measured on 9 days; in 1876 only ·798 of an inch fell on 6 days; in 1887 only ·882 of an inch fell on 10 days; and in 1888 only ·978 of an inch on 11 days. In 1890, 2·438 inches fell on 17 days. May was the first month in 1891 in which the rainfall exceeded the average.

A solar halo was seen on the 8th, and a lunar halo on the 17th. High winds were noted on as many as 8 days, attaining the force of a gale, however, on not one occasion. Snow or sleet fell on the 16th and 17th. Hail occurred on the 1st, 2nd, 3rd, 15th, 16th, 17th, 19th, and 26th. Thunder was heard on the 28th.

During the month the thermometer in the screen did not fall below 32° , but on six nights a temperature of 32° or less was recorded on the grass. The mean minimal temperature on the grass was $37\cdot7^{\circ}$, compared with $42\cdot2^{\circ}$ in May, 1890, $42\cdot4^{\circ}$ in May, 1889, $37\cdot5^{\circ}$ in 1888, and $37\cdot9^{\circ}$ in 1887.

On Friday, the 1st, heavy showers of rain and hail fell at many stations, and the wind veered from S.W. to N.W. at night, with a rapid fall of temperature. The resulting rainfall in Dublin was ·338 inch. On Saturday, the 2nd, hail also fell.

Changeable, but generally favourable weather prevailed during the week ended Saturday, the 9th. In Ireland the rainfall was heavy, and the amount of sunshine was small; yet the moisture was needed and proved beneficial; and the clouds, which shut out the sunshine by day, checked radiation at night and so prevented the occurrence of those spring-frosts, which are so harmful to vegetation. At first, westerly winds prevailed, with showers of rain and hail. On Monday, the 4th, a southerly current set in over Ireland, lasting until Thursday and bringing clouds and genial rain. On Friday a complex series of low pressure systems was found over the British Islands, the wind shifted to N.E. in Ireland and the weather became bright and bracing as the disturbances travelled away southeastwards. Saturday was again fine—cloudy and dull in the forenoon, fair in the afternoon. In Dublin the mean

height of the barometer was 29·890 inches. The corrected mean temperature was 50·1°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 50·7°. The rainfall amounted to ·471 inch on four days, the maximal record in 24 hours being ·310 inch on Thursday. Hail fell on Sunday, the 3rd.

Summer and winter met in the week ended Saturday, the 16th. The first four days were beautiful—bright, sunny, warm days being followed by cool, refreshing nights. Atmospheric pressure was uniformly high, and the type of its distribution was anticyclonic, except in the S.E. of England, where shallow depressions were found on Sunday and Monday, causing dull, cold, and rather rainy weather in that district. In Dublin the prevailing wind was N.E. until Wednesday, and then N.W. to the end of the week. This latter wind was part of the circulation round a succession of depressions, which travelled southeastwards across Scandinavia and the North Sea on and after Wednesday, the 13th. It brought back winter to the British Islands—squalls, hail-storms (accompanied in many places by thunder on Friday), and showers of sleet and snow prevailing on Friday and Saturday. In contrast to this, on Tuesday the thermometer had risen to 81° in the shade at Loughborough, and to 78° in London, while even on Wednesday the maxima were as high as 76° at Oxford and York, 77° at Hurst Castle, 78° in London, and 80° at Cambridge. In Ireland the highest reading was 75° at Parsonstown on Tuesday, on which day the maximum in Dublin was 67·8°. In this city the mean pressure was 30·107 inches—highest, 30·293 inches at 9 a.m. of Tuesday (wind, E.N.E.). The corrected mean temperature was 52·1°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 51·4°. On Tuesday the screened thermometers rose to 67·8°, and on Saturday they fell to 37·7°. The rainfall was ·118 inch, on three days, the maximal fall in 24 hours being ·088 inch on Friday. On Saturday the maximal shade temperature was only 47·6°.

Many years have passed since the third week in May has proved as inclement as that of 1891. Sunday, the 17th, was like a day in mid-winter—frequent heavy showers of hail, sleet, and cold rain keeping the temperature so low that the maximum in the screen was only 45·7°. At night a sharp frost occurred on the grass, and the sheltered thermometer fell to 32·8° in the city. The minimum at York during this night was 24°, and snow fell heavily in some of the English midlands. Whitsun Monday proved fair and bright on the east coast of Ireland; but very cold, wet weather prevailed over the South of England, to which district a complex system of low pressure had advanced from the westward. Indeed, all through the week, conditions were cyclonic over Western Europe, and a succession of areas of low pressure passed up the English Channel; then turning northwards, they disappeared off the west coast of Norway. On Saturday a depression advanced more directly over

Ireland, where the weather once more became cold and raw, squally and wet. On this day as many as four separate depressions were shown on the weather chart. Thunder and hail showers were a common occurrence during this cold period, which might aptly be called a "relapse into winter." In Dublin the mean height of the barometer was 29·601 inches. The corrected mean temperature was only 45·0°, or 7·1° below that of the previous week (52·1°). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·1°. The screened thermometers fell to 32·8° on Monday morning and rose to 56·7° on Friday. The rainfall was ·668 inch, on four days, ·272 inch being measured on Saturday. The prevailing winds were N.W. and N.E.

Very broken, showery weather held throughout the week ended Saturday, the 30th. There was, however, a decided advance in temperature, which became more accentuated towards the close, with the setting in of a southerly air-current. During the greater part of the period the weather in the British Islands was determined by an atmospherical depression, which followed a very erratic course. On Sunday morning the centre of this system lay over St. George's Channel, whence it travelled eastwards across England, causing a prolonged thunderstorm and heavy rainfall in London during the afternoon. On Monday the centre was found off the Wash, where it remained nearly motionless for 24 hours. The system then began to travel slowly westwards, accompanied by thunder and hail showers, reaching Ireland on Thursday morning. On this day six-tenths of an inch of rain fell in Dublin, and thunder was heard at 9 and 11 a.m. With the coming of the S.W. winds of the depression the weather improved on Friday, when the disturbance passed off from the coast of Donegal in a northwesterly direction. In Dublin the mean height of the barometer was 29·677 inches, pressure ranging between 29·924 inches at 9 a.m. of Monday (wind, N.N.E.), and 29·436 inches at 9 p.m. of Thursday (wind, S.E.). The screened mean temperature was 49·0°, or 4·0° above that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 49·5°. The thermometers in the screen rose to 62·6° on Saturday, having fallen to 41·2° on both Monday and Tuesday. The rainfall was ·922 inch on four days—·600 inch being measured on Thursday. Hail fell on Tuesday and thunder was heard on Thursday.

Sunday, the 31st, was squally, and for the most part, wet.

The rainfall in Dublin during the five months ending May 31st has amounted to 5,995 inches on 63 days, compared with 11,483 inches on 76 days during the same period in 1890, 10,476 inches on 91 days in 1889, 9,068 inches on 69 days in 1888, 6,489 inches on 62 days in 1887, and a 25 years' average of 10,496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in May, 1891, was 3·615 inches, distributed over 16 days. Of this quantity ·840 inch

fell on the 7th, .790 inch on the 23rd, and .620 inch on the 31st. The total fall since January 1st, 1891, equals 9.340 inches on 59 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in May was 2.19 inches on 15 days. The total fall since January 1 has been only 4.62 inches on 53 days—the averages of the six previous years for the same five months being 9.38 inches, on 93 days.

PERISCOPE.

THE INFLUENZA EPIDEMIC OF 1891.

IN the *British Medical Journal* of May 9, 1891, page 1036, Dr. J. W. Moore, F.R.C.P.I., offers a meteorological explanation of a very puzzling circumstance connected with the spreading, or, shall we say? the transference, of the disease from point to point on the earth's surface:—Influenza has been raging in North China since the beginning of the winter just past. It appeared in several towns in the United States of America early in March, and spread eastwards from Chicago, Pittsburg, Cleveland, and several other places in Ohio and in Iowa, finally invading New York and other cities near the eastern seaboard. The deaths from influenza in New York were—for the week ending March 28th, 4; that ending April 4th, 48; and that ending April 11th, 108. About this last date an outbreak occurred in Norway, 891 cases being reported in one week in Christiania, and also in Sweden, notably in Göteborg. Almost simultaneously a severe outbreak took place in Yorkshire and Lincolnshire, extending thence southwards and westwards to the Midlands and the south-eastern counties of England. Nothing is more interesting than to compare the death-rates of the twenty-eight great English towns in the first table in the Registrar-General's return for the week ending April 25th. Outside the epidemic area we find such low rates as 11.6 per 1,000 per annum at Brighton, 16.2 at Derby, 18.0 at Bristol, and 17.7 at Salford; inside that area we have 33.9 at Halifax, 36.5 at Hull, and the appalling rate of 57.8 at Sheffield.^a A lower temperature during April on the north-east coast of England, and keen, dry, easterly winds no doubt contributed to this high death-rate, but it was chiefly caused by influenza and its complications. Dr. Moore's chief object, however, is to draw attention to a possible—perhaps a probable—explanation of the almost certain connection between the several epidemics of the past winter and spring in China, North America, and North-Western Europe. The explanation to which he refers assumes the micro-parasitic origin of influenza, and is based on meteorological considerations. And, first, how did the influenza microbe find its way

^a 70.3 per 1,000 in the week ending Saturday, May 2nd.

from China to the centre and eastern seaboard of North America? In winter—as our readers are aware—a vast area of atmospherical depression lies over the North Pacific Ocean, while cold, and therefore dense, air is gradually piled up into a great anticyclone, or area of high barometrical pressure, over the North American Continent. Round the former system there is a great cyclonic sweep of air from N.W. in China to W. over the Pacific, and to S.W. and S. over Vancouver's Island, British Columbia, and the north-west coast of North America. In these latter regions the air will be ascending to spread out eastwards in the higher strata of the atmosphere, and finally to share in the formation—over the North American Continent—of the anticyclone above referred to. Such air currents as are here described can easily be imagined to be the carriers of micro-organisms from China to the higher strata of the atmosphere over North America. But the air descends in the eastern and southern quadrants of an anticyclone in the Northern Hemisphere, and so we have a vicious cycle completed in the scattering broadcast over large districts of the United States of the pernicious air-borne microbe of influenza. But, between America and Europe, we have, in winter, a state of things which is very analogous to that which holds over the Pacific. The “North Atlantic storm area” is really a vast winter cyclonic system, or area of low barometer, while over Eastern Europe and Asia a gigantic anticyclone forms in winter—the barometer, as is well known, rising above 31 inches in Siberia near the centre of the high pressure area. For distribution by these atmospherical systems in a way analogous to what probably occurred in America, the influenza microbe arrived too late. It was, however, in time to be distributed by the spring systems of atmospherical pressure, which are—a commencing summer low pressure area over North America, and a spring anticyclone over Scandinavia and that part of the North Atlantic to which the name of the “Norwegian Sea” has been given. Reference to the weather charts published in the “Daily Weather Report” of the Meteorological Office, London, will show that almost uninterruptedly from April 1st to 25th, 1891, an anticyclone hung over either Scandinavia or the Norwegian Sea, or over both these districts. Under such circumstances, easterly and north-easterly winds—descending from the higher strata of the air, and hence so keen and dry as these winds are known to be—played upon the very districts in Sweden and Norway, and England, which were simultaneously affected with epidemic influenza. The foregoing considerations as to the transference of the virus or contagium of influenza by means of the great aerial currents of the atmosphere are based on the view that influenza is an acute infective disease of the miasmatic, rather than the miasmatic-contagious class; and that its virus, unlike that of typhus fever, is not rendered inert by oxidation from contact with atmospherical air, but rather the contrary. Several writers, however, have

advanced the view that it is both a pandemic, or miasmatic, and an epidemic, or miasmatic-contagious disease. Thus Dr. P. Duflocq, Chef de Clinique in the Faculty of Medicine in Paris, concludes an elaborate article on the clinical varieties of influenza observed in that city in December, 1889, and January, 1890, with these words: "La grippe semble donc être une maladie à la fois épidémique et contagieuse et la période d'incubation serait de deux jours."^a Even if we adopt this theory, it in no way militates against the view which Dr. Moore has put forward as to the air-borne origin of influenza epidemics.

CONSANGUINEOUS MARRIAGES.

The *N. Y. Medical Record* summarises a paper on this subject contributed by Drs. Louis and Gustave Lancry to *L'Union Médicale* (No. 24, 1891). A little commune, Fort Mardic, on the northern coast of France, affords a rarely occurring opportunity of a scientific study of an important subject. The place was originally settled by four Flemish families, differing in race and language from their neighbours, so that it may be assumed that the great majority of the early marriages was consanguineous, and even now 24 per cent. of unions are between cousins of not more than two removes. (The percentage of such marriages for the whole French population is less than three.) From 1882 to 1886, 63 of these unions took place in Fort Mardic. Of all the resulting children only *two* were defective. One was a deaf mute, with perfect speech to the age of three years, when he lost his hearing; the other was an idiot, whose mother had nearly lost her life by an accident during her pregnancy. So far as to the injurious effect of parental consanguinity upon offspring. As to its effect on fecundity of parents, it was found that of the total number of marriages in the commune between 1882 and 1886, 10·4 per cent. were sterile, and 4·3 per cent. produced but one child each. Of the consanguineous marriages 16 per cent. were unfruitful, and 7·95 produced each but one child.

DEAFNESS TO SPECIAL SOUNDS.

THE *Cleveland Medical Gazette* mentions a remarkable case of special deafness, occurring in the person of the late Mr. Cowles, editor of the *Cleveland Leader*. He described his deficiency of auditory power thus:—"You may fill the room with canary birds," he once said, "and they may all sing at once, and I would never hear a note, but I would hear the fluttering of their wings. I never heard the hissing sound in the human voice; consequently, not knowing of the existence of that sound, I grew up to manhood without ever making it in my speech. A portion of the consonants I never hear, yet I can hear all the vowels. About a quarter of the sounds in the human voice I never hear, and I have to watch the

^a *Revue de Médecine*, tome x., p. 85, Février, 1890.

motion of the lips and be governed by the sense of the remarks in order to understand what is said to me. I have walked by the side of a policeman going home at night and seen him blow his whistle, and I never could hear it, although it could be heard by others half a mile away. I never heard the upper notes of the piano, violin, or other musical instruments, although I would hear all the lower notes."

MEDICAL LIBRARIES.

IN an Address to the New York Academy of Medicine, delivered on the occasion of the opening of the new building on the 20th November, 1890, Dr. E. L. Keyes gives the following statistics of the principal medical libraries :—

Comparative Table of Medical Libraries.

Name of Library	Date	Volumes	Journals	Current Journals	Pamphlets
Academy of Medicine, Paris -	1820	130,000	18,000	390	144,887
Surgeon-General's Office, Washington -	1865	97,886	33,273	over 700	
College of Physicians, Philadelphia -	1789	45,000	...	400	
Academy of Medicine, New York -	1847	40,000	...	400	
Medical and Chirurgical Society, London -	1805	36,000	...	150	
Medical Society, Berlin -	1839	about 30,000			No record kept.
Royal College of Surgeons, Dublin -	...	about 25,000			
Medical Library Association, Boston -	...	19,365	...	381	
New York Hospital Library, New York -	...	18,386	...	109	
Royal Imperial Society of Physicians, Vienna -	...	11,069	...	132	
Aberdeen Medical Society, Scotland -	...	6,000	...		

A MOUTH WASH.

TANNIC acid, 5 grammes ; tincture of iodine, 5 grammes ; tincture of myrrh, 5 grammes ; iodide of potassium, 1 gramme : rosewater, 200 grammes.— Mix. A teaspoonful to a glass of tepid water. To prevent caries.— *L'Union Médicale*, No. 124.

ADDRESS ON VERTIGO OF BULBAR ORIGIN, BY THOMAS BUZZARD, M.D.

IN this Address, delivered before the Harveian Society, and reprinted from the *Lancet*, the author argues that many cases of vertigo, accompanied by auditory symptoms, are not due to labyrinthine disease, but to some disturbance, often of a gouty nature, at the origin of the auditory nerve in the medulla oblongata. These affections are analogous to the

vomiting and gastric crises in tabes dorsalis, which are due to sclerosis at the nucleus of origin of the vagus, and to cases of neuralgia due to changes in the ascending root of the trigeminus.

FEMALE MEDICAL EDUCATION IN BALTIMORE.

THE authorities of the Johns Hopkins University have accepted a gift of a hundred thousand dollars (£20,000), of which 48,000 was contributed by Miss Garrett, to be invested as the Women's Medical School Fund, and to be the nucleus of a fund for the establishment of the medical school of the University when not less than 500,000 dollars has been collected. The condition of acceptance laid down by the donors, represented by Mrs. Nancy Morris Davis, "Chairman of the Baltimore Committee," is that the Johns Hopkins trustees will "by resolution agree that women whose previous training has been equivalent to your preliminary medical course shall be admitted to the school when it shall open, upon the same terms which may be prescribed for men." The *N. Y. Medical Record* does not like the transaction. The Johns Hopkins medical department will be "a bi-sexual institution;" the prestige of the medical school will be seriously impaired, and its usefulness limited; "the best-educated and most ambitious" students will seek other colleges free from "the disillusioning propinquity of lady medicals;" the medical education of women has thriven best in independent institutions; and so on. Our contemporary "fancies" that the whole melancholy business is largely "the result of the persistent nagging of some of the estimable and well-meaning ladies of Baltimore."

CACTUS GRANDIFLORUS.

DR. ENGSTAD (*Therapeutic Gazette*), after a prolonged trial of the fluid extract of the cactus grandiflorus, recommends it as a cardiac tonic similar, but superior, to digitalis. He also used it successfully for palpitation, pericardial effusion, pneumonic typhoid with very feeble cardiac action, the convalescence of typhoid, and in angina pectoris.—*L'Union Médicale*, No. 131.

DANGERS OF HYPNOTISM.

MR. NOLAN, Senior Assistant at Richmond Asylum, Dublin, has reprinted a case which he contributed to *The Journal of Mental Science*. He calls it "stuporose insanity consecutive to induced hypnotism," and appears to regard it as an antidote to Richet's remark, "*je n'ai jamais rien vu survenir de grave*," and Heidenhain's dictum, "there is no ground whatever for objection to hypnotic experiments." Mr. Nolan does not venture to call the insanity consequent on the hypnotism; and it appears clear that the patient was on the verge of insanity, if not over it, before the hypnotic state was induced. The moral of the case is that a man enfeebled in

body and mind by alcoholic and sexual excesses is not a suitable subject for unscientific hypnotic experimentations; and in this conclusion Richet and Heidenhain would concur.

NOCTURNAL ENURESIS.

DR. VAN TIENHOVEN suggests (says the *N. Y. Medical Record*), in the *Correspondenzblatt für Schweizer Aerzte*, that though the bladder acts normally through the day, it misbehaves at night. He believes that the vesical sphincter is not strong enough to keep back the urine which collects in the bladder in the early hours of the night and permits it to find its way into the prostatic portion of the urethra. The detrusor vesicæ is thus reflexly stimulated and the bladder emptied. In order to prevent the urine from running into the urethra in this way the children were made to sleep with the pelvis elevated. In this position the bladder is capable of holding a certain amount of urine before the liquid reaches the level of the urethral opening. The foot of the bed must be elevated so that the bed forms an angle of forty-five degrees with the horizontal. The children should be sent to bed with empty bladders, and should not take any liquid just before retiring. They sleep well in this position and do not complain. Fourteen cases were treated by this simple method only, and all were cured in a short time.

SALT IN MILK.

DR. A. JACOBI states (in the *Archives of Pædiatrics*) that common salt should invariably be added to cow's milk when infants are fed upon it; and to woman's milk if it forms solid coagula in the bowel and is indigestible in consequence. Salt "prevents the coagulation of milk by either rennet or gastric juice."

WHOOPIING-COUGH.

DR. NÄGELI asserts (*Revue des Sciences Médicales*) that a paroxysm of pertussis may be aborted by drawing the lower jaw downwards and forwards; and that the course of the disease is favourably affected by suppressing the attacks. Spasmodic cough due to other causes may be similarly restrained.

GLYCOSURIA FROM SALOL.

M. BARBIER, in an article on the use of salol in septicæmia, mentions that during its use glycosuria is present.—*Gazette Médicale de Paris*, No. 45.

PERITONITIS FROM PERFORATION IN AN INFANT.

M. TOLMATCHEFF, Kasan, reports a case of peritonitis from perforation of a gummatous ulcer in a child three years of age.—*Le Mercredi Médical*.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*On the Variability of the Upper End of the Fibula.*^a
By E. H. BENNETT, M.D., Ch.M., F.R.C.S.I.; Professor of
Surgery in the University of Dublin, &c.

TEN years ago^b I demonstrated, from the examination of our collection of fractures in the Museum of Trinity College, the details of the fracture of the upper third of the fibula which occurs from indirect injury—that is, from twisting of the ankle-joint when in the position of extreme extension. I recorded then and since the clinical facts presented by this not uncommon fracture, and showed that the neglect of this region of the bone in surgical examinations of the injuries of the lower limb had led to the establishment of false doctrine (which we find expressed in the repeated assertions of surgical authors), that this part of the fibula possesses immunity from fracture other than that arising from direct injury.

In prosecuting from time to time a further search in this direction, I have been able to collect evidence of defects and varieties in the anatomical relations of the upper end of the fibula which have, I think, hitherto escaped notice. Although the note I now submit is very imperfect, I lay it before the Anatomical Section of the Royal Academy in the hope that its publication may lead to a more extended examination of the subject than it is

^a Read before the Section of Anatomy and Physiology of the Royal Academy of Medicine in Ireland, on Friday, January 9, 1891.

^b Dublin Journal of Medical Science, February, 1880.

possible for one observer to make, more particularly one who is no longer occupied in the teaching of anatomy.

The variation in the relations of the upper extremity of the fibula which is best known is the occasional continuity of the synovial sac of the superior tibio-fibular joint with that of the knee-joint. All writers on the surgical anatomy of the leg refer to this because of the risk which such exceptional communication entails in the adoption of Baron Larrey's suggestion to excise the upper extremity of the fibula in amputation of the leg at the highest possible part short of disarticulation, above the site of the so-called amputation at the seat of election.

The great reputation of the author of this proposition has rendered this abnormality notorious.

The liability of the tibio-fibular joints to osseous ankylosis or the development of an osseous bridge between the bones at the site of fracture has been observed by Malgaigne, and has been referred to by many writers as impairing the functions of the leg after fracture by depriving the fibula of its movements on the tibia.

Of both these changes our collection contains several examples. Of the latter see an example in Fig. B.

I find that the head of the fibula varies greatly, and that its articular facette is very variable in size, shape, and position on the upper extremity of the bone.

In the second place, I find that the facette may be entirely absent, and the head of the fibula may not reach up, so to speak, to touch the tibial condyle at all. Of these inconstancies of the bone no mention is made in our text-books of normal or of pathological anatomy.

The site and relations of the articular surface on the head of the bone is thus described:—

“The articular surface of the fibula, placed upon the upper and inner aspect of the head of the bone, is oblong with the greatest diameter from above downwards and inwards, is slightly concave in the same direction, and looks upwards and inwards.” (Humphry.)

Again:—

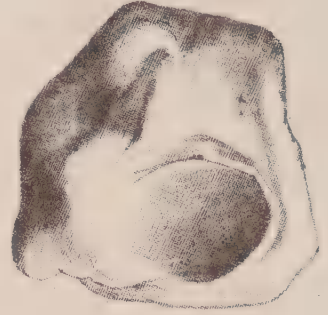
“The superior extremity or head, somewhat expanded, presents a small oval cartilaginous surface looking upwards and inwards, and externally to this a rough prominence directed upwards, to which the tendon of the biceps muscle is attached.” (Quain.)

I now exhibit (see frontispiece) nine right fibulæ and six left, which present a great variety of the size, shape, and position of

10



11



12



13



14



15



LEFT FIBULA.

DR. BENNETT ON THE VARIABILITY OF THE UPPER END OF THE FIBULA.



RIGHT FIBULA



DR. BENNETT ON THE VARIABILITY OF THE UPPER END OF THE FIBULA.



DR. BENNETT ON THE VARIABILITY OF THE UPPER END OF THE FIBULA.

the articular facette. In one, No. 9, it is almost absent; in No. 15 it is doubled.

In this series the right bones are numbered from 1 to 9, the left from 10 to 15.

Looking at the ends of the bones from above it will be seen that the general outline of each is roughly quadrilateral, the highest point being the posterior and external angle. In the more normal of each series, Nos. 1 and 10, the articular cartilage reaches from near this angle downwards and forwards, towards the inner side of the quadrilateral.

In Nos. 3, 4, 5, and 6, it is placed along the inner side remote from the posterior angle.

In Nos. 7, 8, and 9, it occupies the posterior and outer angle only, reaching quite up to the highest point of the bone; and in No. 9, while it is confined to the very summit of the angle, it is reduced to almost a vanishing point in size.

The series of left bones show similar varieties, while the last (No. 15) presents two facettes—the posterior very similar in size and position to that on No. 9; the second lies on the antero-internal border of the quadrilateral.

The importance of these variations is small, but they throw light on other specimens I now submit. These were the cause of my looking into the question, as they were the first irregularities I observed, coming to the subject, by the way, of the study of fractures.

In these three examples of united fractures (Figs. A, B, and C) the upper end of the fibula fails to reach the tibia, and no superior tibio-fibular joint is present. I was at first inclined to think that these were examples of arrest of growth from the damage done by fracture. A difficulty at once presented itself in the fact that the evidences of fracture were placed at the lower end of the bones, while the arrest (if it were arrest) of growth from this cause was at the upper end.

I found before long this specimen (Fig. A), which put the fracture theory out of consideration. Here a comparatively recent fracture is associated with great defect of the upper end of the bone—the greatest in the series; but the bones are those of one who had no trace of youth in the skeleton. Arrest in this case took place long before the fracture, and I think we must admit the general features of the other specimens agree with those seen in this. Taken with the variations I have noted in the articulation, I believe we must place both groups in a continuous series.

This one specimen (Fig. D), similar in the defect of the upper end of the fibula, is interesting as showing how an exostosis may produce the arrest of growth. The exostosis is one of that variety which is commonly congenital. It has beaten the parent bone in its growth. Advancing toward and across the interosseous interval of the leg it has buried itself in the tibia without fusing with its tissue. In this way, hitching against the tibia, it has held down the fibula in its upward growth, and a condition similar to simple arrest, which the other specimens show, has been the result.

I admit the great incompleteness of this note. I have no recent specimen to show which would answer the question certain to be put—What is the nature of the union of the bones in these cases? Anyone who knows the difficulties that attend the procuring of bones which are fellows will admit that I am justified in placing these four specimens—such as they are—before the meeting, in the hope that by direction of attention to their existence the complete anatomy of the defect may be worked out.

ART. VI.—*An Analysis of 105 Cases of Enteric Fever treated in the Station Hospital, Alexandria, 1st January to 31st December, 1890.* By BRIGADE-SURGEON ALBERT A. GORE, M.D., Army Medical Staff.

NINETY-SIX occurred in men of a very young and recently-arrived battalion just completed a year in the country—three were men of other corps, four were men of the Medical Staff Corps who contracted the disease while in attendance on the sick, and two were admissions from H.M.S. “Carysfort,” the disease originating on shore, the crew being perfectly healthy.

Prevalence by Months.

January, 1; February, 0; March, 4; April, 2; May, 4; June, 5; July, 7; August, 22; September, 28; October, 11; November, 20; December, 1. Eighty-one, or 77·1 per cent., occurred in the season characterised by a high, moist, relaxing temperature, with, towards its close, the first rains stirring up impurities in drains and the soil, followed by a reduction of temperature and predisposition to chill. The colder months of January, February, and December, only yielded two admissions.

*Influence of Age.**Completed.*

19 years	20	21	22	23	24	25	26	27	28	29	30
10	24	27	16	14	5	3	4	1	1	—	—

Sixty-one, or 58 per cent., had only completed 21 years of age, and 77 per cent. were under 24.

In Egypt—completed.

1 month	2	3	4	5	6	7	8	9	10	11	12	Unknown
—	—	5	2	6	3	8	22	26	11	17	2	3

The disease was most prevalent in the eighth, ninth, tenth, and eleventh month after arrival, corresponding with August, September, October, and November.

Predisposing Causes.

The figures bring out youth and recent arrival in a very marked manner. According to Bryden the liability in India under 25 years of age is 63·05 per cent. ; in first and second years' residence, 64·12 per cent.

*Symptomatology.**Evening Temperature on Admission to Hospital.*

102° and under 103°	103° and under 104°	104° and under 105°	105° and under 106°	106° and under 107°
41	32	26	6	—

Maximum Temperature reached.

102° and under 103°	103° and under 104°	104° and under 105°	105° and under 106°	106° and under 107°	107°	108°	109°
8	35	39	17	1	4	—	1

Duration of Pyrexia in Hospital, in Days.

Under 21 days.	21 and under 31 days.	31 days and over.
80	20	5

In the latter class, in 1 it continued 31 days, in another 33, in a third 35, in a fourth 36, and in a fifth 39—the longest.

Relapses.

Twenty-five; second relapses, 3; third relapse, 1. The interval of normal temperature ranged from 1 to 26 days, and the maximal temperature from 100° to 105°. In one-third, the maximal temperature ranged between 102° and 104°. In several the temperature did not rise higher than 103°.

Duration of Relapse, in Days.

3 days	6	7	8	9	11	12	13	14	15	16	17	19	23	24
3	3	6	2	1	3	1	1	4	1	1	1	1	1	1

Maximum Pulse in Cases of Fever.

70 to 80	80 to 90	90 to 100	100 to 110	110 to 120	120 to 130	130 to 140	140 to 150	150 and upwards
4	13	30	24	14	7	4	3	6

Bowels.

In 18 constipation, or a tendency to it, was noticed. In the great majority the stools were described as "light yellow," in a few as dark green and offensive. Profuse diarrhoea was exceptional. Hæmorrhage occurred in 6 cases, three of which proved fatal. Perforation occurred in two, both proving fatal.

Specific Rash.

In two-thirds of cases present—in some very well marked, both during the primary attack and when there was a recrudescence of the abdominal symptoms in the relapse. In one case, where the other symptoms of typhoid were present with profuse hæmorrhage, the rash was extensive and maculated.

Mortality.

Twenty deaths occurred, or 19·05 per cent. of cases treated.

General Characteristics.

There was nothing particular to describe in the tongue; coated, with red tip and edges, was the appearance most often met with. Gurgling in the right iliac fossa was more or less marked, but was not a very characteristic symptom. Excessive tympanites was uncommon, more frequently rounding of the abdomen only. Much delirium was exceptional; violent, requiring restraint, was rare. Prolonged convalescence occurred in a few cases only. The great majority returned to duty. Three-fourths of the attacks came under the heading of mild typhoid. Several attacks aborted early. This was especially remarked when the cool weather returned at the close of the year. The hot, humid months were the most trying to the patients. A very mild attack would have vacillations of temperature of 2° to normal about 14th day; might or might not be followed by a slight recrudescence of temperature some days later, or the attack might be mild and short, with very marked vacillations approaching the remittent type. In some mild cases

there was high temperature for a week, followed by vacillations later. In others the temperature was irregular throughout. In a severe and prolonged case, with bed-sores and great emaciation, a high temperature was followed by a very pronounced "status typhosus," debility, and relapses; or there was a prolonged, severe fever, the temperature ranging high throughout. In one case when the primary attack aborted on the 15th day a double relapse followed, and on the 24th day after the second relapse there was a slight rise of temperature for some days; the bowels were constipated. In another, when the primary attack was prolonged and severe (39 days), an interval of 7 days of normal temperature was followed by dysentery, the temperature rising to a maximum of 101.2° , and not subsiding for 19 days. In a case of prolonged attack, the temperature never rising above 103.8° , there were loose yellow stools; 12 days after normal temperature a severe relapse, with high temperature (104.8°), quickened pulse, and diarrhœa following upon the first use of chicken diet. In another a prolonged low temperature followed the pyrexia; a short relapse, quickened pulse, and diarrhœa resulted from an enema. In another, after an interval of 7 days' normal temperature, a custard pudding was given; a relapse lasting 24 days ensued. In another case dysenteric symptoms arose as a complication. In one case, in which the primary attack was severe—temperature, 105° , duration of pyrexia, 23 days—after an interval of six days a very serious relapse followed upon some small indiscretion, with a profuse crop of spots, diarrhœa, great debility, and prolonged sweating, the temperature rising to 105.8° . This patient was only pulled through by the most careful nursing. He was the orderly of the Medical Staff Corps. He and another contracted the disease while in attendance on the sick—probably from the stools—but they were very differently attacked—one most severe, the other mild and aborting on the 13th day, the dose of the poison being different. In three or four cases convalescence was marred by the occurrence of lymphangitis affecting one lower extremity. A third case was complicated with dysentery.

Diagnosis.

A young soldier, under twenty-four years of age, under twelve months in the command, more especially during the months of August, September, October, or November, when the atmosphere is humid; temperature of air about 85° . The patient's counten-

ance pale; his pulse increased; the evening temperature, 102° to 103° on admission; pulse, 70 to 80; tongue coated with a white or brown fur, edges and tip red; slight wincing on pressure or tenderness, or gurgling in right iliac fossa; bowels constipated or loose. Would in all probability prove to be enteric by the course of the fever, and other confirmatory symptoms and signs, such as loose yellow stools, rose spots, slight delirium at night, anorexia, thirst, temperature increased to 104 – 105° , pulse, 100 to 110; enlarged spleen, rounded or tympanitic abdomen, sordes, the pyrexia lasting most often 21 days.

First Cases.

The first case occurred in the person of a private, military mounted police, who, while on patrol, Christmas Night, 1889, was wet through by heavy rain. He came into hospital in January, 1890, with enteric fever—a severe attack. He occupied a hut raised from the ground on pillars; no drains or smells in vicinity. No other case occurred in the troop. The disease was probably contracted in the more unsanitary parts of the town while patrolling on night duty, the exciting cause being a chill. In the newly-arrived regiment there was no enteric fever until March, when, on the 12th, the first case was admitted—a young private, aged twenty, under three months in Egypt. The case was a severe one; he spent 96 days in hospital. About 10 days previous to admission the first “khamshins,” or hot winds, were felt at Alexandria.

Fatal Cases.

Twenty included in the foregoing. Of these, 16 were under 24, and 4 over that age; average age, 21·7 years.

General Health Previous to Last Illness.

1. Indifferent for 10 days. 2. Delicate and weakly—had been in hospital 36 days with secondary syphilis. 3. Healthy, and of steady habits. 4. Good. 5. Good. 6. Good. 7. Indifferent. 8. Indifferent. 9. Indifferent. 10. Indifferent. 11. Good. 12. Good. 13. Good. 14. Good, but a steady drinker. 15. Indifferent. 16. Weakly. 17. Good. 18. Good. 19. Good. 20. Good.

Prodromata.

1. Out of sorts with diarrhoea for ten days previous to admission to hospital. 2. Diarrhoea; had a dry tongue on admission. 3. Ailing for four days, with loss of appetite, headache, weakness;

bowels constipated. 4. For a week had not been feeling well, was listless, had lost his appetite. 5. For two or three days had been suffering from headache, weakness; had had diarrhœa for a week. 6. Ill for 10 days with diarrhœa; frequent brown loose stools. 7. His illness began with loss of appetite, weakness, fever, headache. 8. Had headache and loss of appetite. 9. Headache and loss of appetite. 10. Had been ailing for several days with weakness; headache. 11. Began very insidiously; only felt ill one day, but his companion stated that he had not been well for a fortnight. 12. Unknown. 13. Began insidiously rather more than a week before admission with headache; anorexia; slight cough. 14. Commenced gradually about a week before admission. 15. Weakness. 16. Began very insidiously, not feeling well for a week before admission with headache; anorexia; colic. 17. Was performing his ordinary duties. 18. Apparently none. 19. Had been ill for a couple of days before admission. 20. Not feeling well for a few days.

Temperature on Admission.

1. 105°	6. 102°	11. 103·2°	16. 102·8°
2. 103·6°	7. 103°	12. 103·2°	17. 102·4°
3. 103°	8. 103°	13. 103·6°	18. 104°
4. 105·6°	9. 102·4°	14. 103·4°	19. 103·4°
5. 101°	10. 104°	15. 103·2°	20. 103·2°

Course of the Fever.

1. High—104° to 105°; reduced 3 or 4 degrees by antifebrin, without permanent effect; pulse, 96 to 160; stools, 3 to 6; coated tremulous tongue; anxious expression of countenance; diarrhœa; breathing rapid and oppressed; two suspicious spots; afterwards very foul tongue; sordes; odour from patient very offensive; no abnormal condition of chest on physical examination; died of heart failure.

2. In first ten days between 103° and 104°, or a little above; began slowly to decline to normal on 20th day; had intercurrent relapse, with temperature of 104° and 103° for thirteen days; pulse ranged from 76 to 148; not much diarrhœa; spots; parched, swollen tongue; abdominal pain and tenderness; breathing laboured and rapid to 60 per minute; pulse feeble and frequent; hæmorrhage; course of fever not influenced by antifebrin, though lowering temperature at intervals for a time; died after second attack of hæmorrhage.

3. At first symptoms of simple continued fever; on seventh day temperature 103° , until 13th, when it rose to 105° ; died; pulse, 96 to 148; a few rose spots on abdomen; delirium continuing and increasing as diarrhoea became profuse; pulse became dicrotic and rose to 150; respirations laboured and thoracic, without any symptoms of lung congestion.

4. Temperature, 105° to 105.6° ; pulse, 102 to 140; dull, listless; headache; constipated; urine retained; restless; incoherent; trying to get out of bed; stomach irritable; no spots or tenderness of abdomen; temperature reduced by graduated cold bath, but not permanently.

5. Gradual but irregular rise of temperature to 105° on eleventh day, when he died; had large yellow stools; a few doubtful spots on abdomen; abdominal pain; somewhat delirious, and trying to get out of bed; pulse, 80 to 140—at close, thready; respirations, 40, shallow.

6. Irregular but low temperature for first week, then between 102° , 103° , and 104° ; pulse, 98 to 120; much diarrhoea at commencement; light yellow stools; tongue coated and yellow; became much emaciated; pulse, 120, full and dicrotic.

7. Fourteen days of irregular temperature, 102° to 103° ; pulse, 94 to 140; the day of death temperature rose to 107.2° ; loose yellow stools; tongue coated, yellowish or white; slight abdominal tenderness; suspicious pink spots; much diarrhoea, difficult to check; emaciating; cold sweats; hæmorrhage.

8. Admitted with inflammation of glands, 14th April, 1890; found to be suffering from latent pleurisy, with effusion; aspirated; next day incision made into left pleura, and a considerable quantity of pus drawn off; recovered; temperature nearly normal, sometimes sub-normal. From 1st June to 16th August up and about. Then complained of not feeling well; lost his appetite; had headache; temperature found to be 102.6° , rose to 104° and 105° , and on day of death to 108° ; pulse, 108 to 140; tongue thickly coated with moist yellow fur; much diarrhoea; temperature reduced temporarily by cold bath—rose to 108° ; became unconscious and died; duration of febrile symptoms, ten days.

9. Course of fever, 100° to 103° ; last ten days, 104° to 105° ; admitted originally for rheumatism; nineteen days afterwards the temperature began to rise; contracted in hospital during convalescence, as in previous case; commenced with headache; loss of appetite; bowels confined; small, loose, yellow stools; pulse, 108

to 140; passed stools in bed; in spite of wet pack, temperature rose to 105°; became unconscious, temperature running up to 109°.

10. Course of fever, 102° to 104·6°; coated tongue, moist yellow fur; pulse, 90 to 108; much diarrhoea; delirious; became violent and noisy; respiration embarrassed; died exhausted.

11. Course of fever, 101° to 104·2°; pulse, 96 to 158; loose, brown, very offensive stools; tympanites; restless; delirious; unconscious; rapid, laboured breathing, 58.

12. Course of fever, 102° to 105·2°; pulse, 96 to 132; tongue tremulous, and coated with a white fur; skin hot and dry; weak, low; loose yellow motions; delirious; temperature before death, 109·4°.

13. Course of fever, 102° to 105°; pulse, 79 to 96; short, dry cough; slight abdominal pain; tympanites; gurgling; tongue tremulous, coated; rose spots on abdomen.

14. Course of fever, 101° to 104·2°; pulse, 88 to 104; tongue coated with a dirty yellow fur; loose brown stools; abdominal pain; prostration; restlessness; delirium; respiration forced and gasping; temperature before death fell from 104° to 102·2°.

15. Course of fever, 102° to 104·4°; pulse, 80 to 150; contracted in hospital on night duty; tongue covered with a white fur, red at tip and edges; slight tympanites; loose yellow stools; wet pack reduced temperature for a time only; collapse; delirium; passed motions in bed; breathing gasping.

16. Course of fever, 102° to 103·6°; pulse, 90 to 120; tongue coated with a dirty yellow fur; abdominal tenderness; tympanites; no spots; restless; sleeplessness; unconscious; incoherent; greenish brown stools; hæmorrhage.

17. Course of fever, 102° to 105°; pulse, 78 to 140; tongue slightly furred; loose brown stools, very offensive; tympanites; gurgling; two rose spots; prostration; restlessness; delirious; coarse rhonchi; collapse; slight epistaxis.

18. Course of fever, 104° to 105·2°; pulse, 80 to 120; characteristic diarrhoea; rose spots; tympanites; abdominal tenderness; difficult breathing; cough; cyanosed.

19. Course of fever, 102° to 105°; pulse, 100 to 156; headache; restlessness; furred tongue; flushed face; abdominal tenderness; offensive olive-green stools, followed by light yellow; weak and tremulous pulse; restless; delirious; difficult respiration.

20. Course of fever from normal to 107°; pulse, 66 to 112; malaise, icteric symptoms; pain in right side; high temperature;

diarrhœa; rapid emaciation; pulse dicrotic; collapse; hæmorrhage; difficult respiration.

One died in May, 2 in June, 7 in August, 6 in September (the two last being very trying months), 3 in October, and 1 in November.

In Hospital.

5 days and under.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	40 and upwards.
3	5	5	3	1	1	1	1

Summary.

Temperature ; Pulse, &c. ; Day of Death.

No. of Case	Temperature	Pulse	Respiration	Day in Hospital	Remarks
1	103 ^o	160	56	12th	Much diarrhœa, exhaustion.
2	102·8	148	40	40th	Hæmorrhage, diarrhœa, exhaustion.
3	103·4	148	28	20th	Delirium, diarrhœa, exhaustion.
4	105·8	160	—	8th	Delirious, exhaustion.
5	105	140	—	17th	Delirious, diarrhœa, exhaustion.
6	102·4	126	—	26th	Much diarrhœa, emaciation.
7	107·2	140	—	17th	Much diarrhœa, some hæmorrhage, exhaustion.
8	107·8	140	—	10th	Excessive diarrhœa, high temperature, exhaustion.
9	109	135	40	16th	Delirium, high temperature, exhaustion.
10	102·6	108	—	9th	Excessive diarrhœa, violent, noisy delirium.
11	105·6	150	58	19th	Diarrhœa, delirious, laboured rapid breathing.
12	109·4	128	32	9th	Delirious, weak, exhaustion.
13	104·6	96	60	11th	Cyanosed, difficult breathing, exhaustion, perforation, peritonitis.
14	103·2	140	32	17th	Delirium, tympanites, prostrated, unconscious.
15	104·4	150	40	25th	Diarrhœa, delirium, collapse, difficult breathing.
16	103·6	120	38	22nd	Partly unconscious, very weak, hæmorrhage.
17	105	140	40	21st	Much prostration and restlessness, delirium at night, rapid breathing.
18	105·4	119	41	10th	Cyanosed, difficult breathing, much diarrhœa.
19	101·8	156	50	7th	Restless and delirious at night, diarrhœa, much prostration, great weakness, collapse.
20	107·2	112	22	14th	Collapse, cold sweats, exhaustion, hæmorrhage.

Pathology.

Body.—Well nourished or fairly well nourished, 13; badly nourished, 1; emaciated, 4; extremely emaciated, 2.

Heart.—1. $8\frac{1}{2}$ oz., small, and contracted. 2. 11oz., walls flabby. 3. 8oz., normal. 4. $9\frac{1}{2}$ oz., right side distended with 3oz. of blood, healthy. 5. 10oz., left, not contracted; right, distended with fluid blood, in which was lying a soft, yellow clot. 6. $7\frac{1}{2}$ oz., flabby. 7. 10oz., pale and flabby. 8. $11\frac{1}{2}$ oz., cavities all dilated; walls hypertrophied. 9. 9oz., substance pale and flabby. 10. $12\frac{1}{2}$ oz., muscle strong and healthy. 11. 12oz., right side distended with dark fluid blood and *post mortem* clots; left side contracted; tissue healthy. 12. 9oz., normal. 13. $11\frac{1}{2}$ oz., right side distended with dark fluid blood; left side contracted. 14. $9\frac{1}{2}$ oz., normal. 15. 10oz., normal; *post mortem* clots. 16. Normal. 17. $11\frac{1}{2}$ oz., healthy; right side contracted, fluid blood and discoloured clot. 18. 10oz., right, distended, pale, and rather more flabby than usual; left, firmly contracted. 19. $9\frac{1}{2}$ oz., right side contained fluid blood and *post mortem* clots. 20. $9\frac{1}{2}$ oz., left side firmly contracted; right, contained clots and fluid blood.

Lungs.

RIGHT.

1. $25\frac{1}{2}$ oz.; lower two-thirds intensely congested and softened, so that tissue readily broke down on pressure, but crepitant; floated in water.

2. 24oz.; crepitant everywhere; patchy congestion throughout, more towards the base; interior of bronchial tubes congested.

3. 20oz.; lower lobe congested and soft, but crepitant and emphysematous over surface.

4. 17oz.; crepitant and congested at base.

5. 18oz.; congested at base; contained fluid blood and frothy mucus.

LEFT.

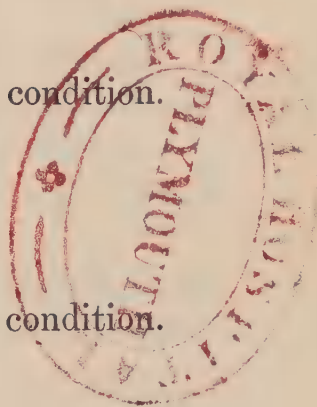
22oz.; in similar condition.

22oz.; in similar condition.

17oz.; emphysematous over surface.

21oz.; crepitant and congested at base.

15oz.; congested at base; contained fluid blood and frothy mucus.



RIGHT.

6. 22oz.; crepitant throughout, but very much congested at base.

7. 24oz.; base much congested, only slightly crepitant; pieces floated in water.

8. 18oz.; somewhat tough and shrunken, but pieces floated in water.

9. 17oz.; normal, except some slight congestion at base.

10. 17oz.; normal.

11. 11½oz.; contracted; generally emphysematous; some congestion at base.

12. 11½oz.; slightly congested at base, but otherwise healthy.

13. 22½oz.; congested; crepitant 9 months.

14. 12½oz.; contracted, slightly congested.

15. 15½oz.; traces of slight passive congestion at base.

16. 16oz.; crepitant, somewhat congested.

17. 28oz.; much congested, especially base.

18. 17½oz.; crepitant, but base much congested; substance friable; bronchi filled with frothy mucus.

19. 20½oz.; much congested and œdematous; containing frothy mucus in bronchi; adherent to diaphragm.

20. 17oz.; crepitant throughout.

LEFT.

21½oz.; crepitant throughout, but much congested at base.

16oz.; generally congested.

23oz.; in a similar condition.

16oz.; in a similar condition.

17oz.; normal.

10oz.; contracted, and in a similar condition.

12½oz.; in a similar condition.

20oz.; in a similar condition.

9oz.; contracted, slightly congested.

17½oz.; in a similar condition.

14oz.; crepitant, somewhat congested.

21½oz.; much congested, especially base.

13oz.; crepitant, base slightly congested.

17½oz.; much congested and œdematous; containing frothy mucus in the bronchi.

13½oz.; congested, but healthy.

Intestines.

Small Intestine.—1. 12th day in hospital—Congested. Twenty ulcers in ileum in stage of infiltration and pin-head necrosis.

2. 40th day in hospital—Large area of deeply congested mucous membrane. Twenty-five ulcers; greater number large, deep, and with ragged margins; several with only peritoneum left; other ulcers of smaller size in healing stage.

3. 20th day in hospital—About a dozen typhoid ulcers, from size of a threepenny piece to $3\frac{1}{4}$ inches long; large ones well advanced in stage of ulceration; smaller in stage of infiltration and commencing ulceration.

4. 8th day in hospital—Partly congested. Three small Peyer's patches in stage of commencing ulceration; others enlarged and thickened, as also a number of the solitary glands.

5. 17th day in hospital—Several patches of congestion, especially in rugæ. Thirty-seven distinct ulcers, besides numerous scattered small ones representing the solitary glands.

6. 26th day in hospital—Much congested through nearly whole extent. Twelve ulcerated Peyer's patches in all stages; some apparently healed.

7. 17th day in hospital—Purple congestion of mucous membrane. Thirteen large Peyer's ulcers, some as large as half-a-crown; several very deep and ragged, with high margins; a large number of small ulcers. Whole length of small intestine nearly transparent from atrophy, and in many places mucous membrane seemed to have disappeared. Some of ulcers covered with blood clots.

8. 10th day in hospital—Number of typhoid ulcers of Peyer's patches; lower ones ragged and deeply ulcerated.

9. 16th day in hospital—Several typhoid ulcers; some large and deep.

10. 9th day in hospital—Three large ulcers of Peyer's patches of some depth; rest of patches in stage of infiltration and pin-head necrosis.

11. 19th day in hospital—Congested in parts. Fifty distinct ulcers; average size, 1 inch by $\frac{1}{2}$ inch. A very great number of the solitary glands in stage of infiltration, and much enlarged.

12. 9th day in hospital—Thirty-nine ulcers in lower portion.

13. 11th day in hospital—Peyer's patches and solitary glands enlarged. Large sloughing perforation in terminal extremity of vermiform appendix, and ulceration of cæcal valve.

14. 17th day in hospital—Twenty ulcers—one reached peritoneum. In upper part Peyer's patches enlarged.

15. 25th day in hospital—Twenty-one large patches of ulceration of Peyer's patches; those near ileo-cæcal valve as large as a

five-shilling piece. In some of ulcers were large dark-grey or yellow sloughs; besides were many isolated circular ulcers, varying from size of a pin downwards, some having a punched-out appearance.

16. 22nd day in hospital—Twenty-six distinctly-marked ulcers, chiefly of Peyer's patches, besides numerous ulcerated solitary glands.

17. 21st day in hospital—Three patches of congestion nearly a foot in length. Ten distinct typical ulcers. Peyer's patches enlarged; numerous enlarged solitary glands; others in stages of ulceration.

18. 10th day in hospital—Much congested in parts; Peyer's patches in all stages of ulceration; 22 ulcers $1\frac{3}{4}$ in. by $\frac{1}{2}$ in. each involving mucous and submucous tissue. Enlarged solitary glands in various stages too numerous to count.

19. 7th day in hospital—Congested. Nineteen typical ulcers in various stages of development; two large ulcers close to cæcum; most advanced had a peculiar worm-eaten appearance; solitary glands enlarged and ulcerated.

20. 14th day in hospital—Much inflamed and congested throughout greater part of jejunum and ileum. Thirty-one enlarged and ulcerated Peyer's patches; greater number advanced in ulcerative stage. Bases much raised above mucous membrane; many nearly two inches in length, both foul and sloughing. A perforation, size of a pea, half a foot from ileo-cæcal valve, result of a slough. Several ulcers in stage of yellow infiltration. At the ileo-cæcal valve whole circumference of bowel affected.

In all cases the ulceration and congestion of the small intestine was most marked near the cæcum.

Large Intestine.—1. Solitary glands enlarged. 2. Large areas of deeply-congested mucous membrane. 3. Mucous membrane swollen and congested. 4. Portion adjacent to caput cæcum coli, for about four inches, slightly congested, and mucous membrane somewhat thickened. 5. 13 round ulcers, the largest $\frac{1}{4}$ inch in diameter; in caput cæcum 6 ulcers. 6. Several small round ulcers, mostly on rugæ. 7. A few small circular ulcers, not deep; mucous membrane congested. 8. Atrophied; a few small circular ulcers. 9. Thin, but not ulcerated. 10. A few small round ulcers. 11. Congested, especially rectum and first 2 inches of ascending colon. 12. One ulcer in cæcum. 13. Great destruction of mucous membrane, with thinning of wall, which in some

parts was almost transparent ; large sloughing perforation in the terminal extremity of the vermiform appendix ; commencing ulceration in cæcal valve. 14. Four ulcers ; congested patches here and there ; two ulcers in caput cæcum. 15. In cæcum seven ulcers, resembling the smaller ones in the large intestine ; there were also masses of them, somewhat larger than the size of a grain of barley, in the transverse and descending colon. 16. Contained a quantity of blood and olive-green fluid ; rectum and colon much congested, and blood clots partially adherent to wall ; six small ulcers in colon, some of them almost penetrating the external coat ; caput cæcum also a mass of ulceration, with distinct traces of hæmorrhage. 17. Two distinct typical ulcers ; mucous membrane much softened ; numerous solitary glands spotted all over the colon, almost to rectum. 18. Congested in parts ; a few solitary glands enlarged. 19. Two congested patches a foot long ; rectum in a state of acute congestion, as also vermiform appendix, numerous enlarged solitary glands spotted all over ; mucous membrane softened ; wall of gut much thinned. 20. Congested in patches ; only a few solitary glands affected.

Mesenteric Glands.—1. Not recorded. 2. Much enlarged. 3. Enlarged. 4. Enlarged, red in colour, and of a jelly-like appearance. 5. Much enlarged, very firm and hard. 6. Moderately enlarged. 7. Moderately enlarged, and of a purple colour from congestion. 8. Extremely enlarged, soft and pulpy on section. 9. Moderately enlarged. 10. Moderately enlarged. 11. Much enlarged and congested, some of them as large as a pigeon's egg. 14. Somewhat enlarged. 15. Many enlarged and varying in size from that of a horse bean to a pigeon's egg ; congested and reddened. 16. Enlarged. 17. Much enlarged, some as large as a pigeon's egg. 18. Very much enlarged, the size of a small hen egg. 19. Much enlarged and indurated. 20. Very much enlarged, three or four size of a walnut ; congested.

Spleen.—1. $16\frac{3}{4}$ oz., enlarged, much congested, very soft. 2. 26 oz., much enlarged, very soft. 3. 20 oz., enlarged, state of purple congestion ; tissue almost a pulp. 4. 11 oz., of a very dark purple colour. 5. $16\frac{1}{2}$ oz., of a very dark purple colour ; friable. 6. $20\frac{1}{2}$ oz., purple colour and pulpy. 7. $7\frac{1}{2}$ oz., a little congested. 8. 31 oz., much enlarged, purple and pulpy on section. 9. 20 oz., purple and pulpy on section. 10. 15 oz., purple and pulpy on section. 11. $16\frac{1}{2}$ oz., of a dark purple colour ; very friable. 12. $9\frac{1}{2}$ oz., congested. 13. 19 oz., much congested, but fairly firm.

14. $3\frac{1}{2}$ oz., contracted and firm. 15. $9\frac{1}{2}$ oz., very firm in consistence, deep red in colour, slightly congested. 16. 19 oz., much congested; very friable. 17. $22\frac{1}{2}$ oz., much enlarged; congested, but fairly firm. 18. 15 oz., large and black with congestion; soft and friable. 19. 12 oz., fairly firm, but congested. 20. $20\frac{1}{2}$ oz., firm, congested.

Liver.—1. 54 oz., congested and softened. 2. 64 oz., normal. 3. 75 oz., no appreciable change. 4. 63 oz., congested, generally with fluid blood. 5. 66 oz., surface mottled, on section pale; greasy to finger. 6. 54 oz., no appreciable change. 7. 64 oz., pale on section. 8. 67 oz., pale. 9. 62 oz., pale. 10. 67 oz., no appreciable change. 11. 72 oz., somewhat congested. 12. 64 oz., congested. 13. 68 oz., normal. 14. 68 oz., slightly congested. 15. 71 oz., enlarged, light in colour, soft and friable. 16. 64 oz., somewhat congested and softened. 17. 69 oz. 18. 73 oz., congested; rather pale, but firm. 19. 82 oz., congested. 20. 68 oz., slightly congested.

Kidneys.—1. Right, 6 oz.; left, $6\frac{1}{2}$ oz.; congested. 2. Right, $8\frac{1}{2}$ oz.; left, $8\frac{1}{2}$ oz.; enlarged. 3. Right, $7\frac{1}{2}$ oz.; left, 8 oz.; enlarged, pyramids congested. 4. Right, 6 oz.; left, 5 oz.; on right, instead of a single artery and vein, four of each opening into kidney. 5. Right, 6 oz.; left, $5\frac{1}{4}$ oz.; congested. 6. Right, $5\frac{1}{2}$ oz.; left, $5\frac{1}{2}$ oz.; congested. 7. Right, 5 oz.; left, $5\frac{1}{2}$ oz.; no appreciable change. 8. Right, $5\frac{1}{2}$ oz.; left, $5\frac{1}{2}$ oz.; congested. 9. Right, 5 oz.; left, 5 oz.; a little congested. 10. Right, 5 oz.; left, 5 oz.; normal. 11. Right, $5\frac{1}{2}$ oz.; left, $4\frac{1}{2}$ oz.; normal. 12. Right, 4 oz.; left, 4 oz.; congested. 13. Right, $5\frac{1}{2}$ oz.; left, 5 oz.; normal. 14. Right, $5\frac{1}{2}$ oz.; left, $5\frac{1}{2}$ oz. 15. Right, $5\frac{1}{2}$ oz.; left, 5 oz.; capsule easily removed. 16. Right, 7 oz.; left, $5\frac{1}{2}$ oz.; normal. 18. Right, 5 oz.; left, $4\frac{1}{2}$ oz.; capsule peeled readily, congested. 19. Right, $4\frac{1}{2}$ oz.; left, 5 oz.; normal. 20. Right, $5\frac{1}{2}$ oz.; left, $5\frac{3}{4}$ oz.; normal.

Pancreas.—In one case, enlarged and indurated, 3 oz.; ditto in another, 5 oz.; in a third, 3 oz.

In these fatal cases the temperature on admission ranged between 101° and 106.6° ; day of death, 101.8° to 109° ; on this last day the pulse rose from 96 to 160; respirations, 22 to 58. The course of the fever varied. The fatal termination occurred between the seventh and fortieth days—minimum and maximum. The body was, as a rule, fairly well nourished; the mucous membrane of the ileum more or less congested; ulcers, 3 to 50. In several there

was an advanced stage of disease when the patient applied for hospital treatment; in one (admitted only seven days to hospital) were 19 ulcers in various stages of development, with the solitary glands enlarged and ulcerated; in only one was the large intestine not involved. The mesenteric glands were more or less enlarged. The spleen ranged between $7\frac{1}{2}$ oz. and 26 oz.—most often purple and pulpy on section. The liver, from 54 to 82 oz., was, as a rule, congested. Kidneys, 4 to 8 oz. Pancreas, 3 to 5 oz. Heart, $7\frac{1}{2}$ to 12 oz. Right lung, $11\frac{1}{2}$ to 28 oz.; left, 10 to 23 oz.; nearly always congested.

Treatment.—Carbolic and iodine antiseptic mixture, antifebrin, digitalis, ammoniac mixture, cold sponging, milk, Brand's essence, beef-juice, stimulants; for complications, that most suitable to each. When there was a constant tendency to high temperature, the cold bath had only a passing effect. Quinine was scarcely used. Mortality, 19·04 per cent.; considerably less than 28·7 per cent., the death-rate recorded by Liebermeister at Basle, when no specific treatment was adopted, but nearly double that when the complete antipyretic treatment has been carried out. All modern experience is tending towards the value of a complete antipyretic course and the administration of such drugs as will at the onset of the disease inhibit the development of the pathogenic microbes so far that the disease may be aborted, and that at any period over-production of the chemical toxins may be prevented, and the fever made to run a mild course. The quantity of milk should not exceed two and a half pints—in cases of hæmorrhage should be prohibited absolutely, and Brand's essence substituted, or raw meat-juice. Over-stimulation in the early stage is most injurious; many cases do well without any intoxicant. Barley-water is probably the best of the diet drinks; whey is also good. There was always abundance of ice, and most skilful nursing. I have never seen a case of perforation recover, but some bad cases of hæmorrhage have done well under the following treatment—viz., absolute rest, Brand's essence, a large ice-bag to the abdomen, ergotin, opium; when the pulse becomes accelerated, digitalis, aconite; later raw beef juice well on into convalescence; a sheet thrown across the body and a blanket over the feet. Smothering up patients in typhoid with blankets should be avoided. Yet how often is it done!

ART. VII.—*The Value of Enlarged Spleen in the Diagnosis of Tuberculosis in Infancy.* By J. A. MÉDAIL, M.D. Translated by CHARLES GREENE CUMSTON, Student Associate of the Royal Academy of Medicine in Ireland; Assistant at the Butini Hospital, Geneva, Switzerland.

I.—“IT is certain that the existence of tuberculosis may be suspected, but not affirmed, in cases where an acute and painful tumefaction of the spleen exists, because acute tuberculosis is accompanied by simple acute tumefaction of the spleen as in typhoid.” This is what Besnier says, in speaking of tuberculosis in general, in his article “Spleen” in the “Dictionnaire Encyclopédique des Sciences Médicales.” In 1886 Landouzy¹ particularly examined tuberculosis in the newly-born, and showed the frequency of the malady, which up to that date was little known. In the very complete table that he traced of this disease he showed, above all, its infectious character, quick progress, and tendency to generalisation. For him the spleen counted among the organs the most often infected, and its enlargement should be an element in the diagnosis. This important remark was confirmed by Professor Damaschino² shortly after; he had also remarked that the spleen was among the numerous organs filled with granulations in very young children affected with tuberculosis. In the same year Dr. Queyrat took the subject for his thesis.³ He noted with care the enlargement of the spleen, and gave it in his clinical proofs a large share in the diagnosis. Dr. Money, in a very judicious commentary, with a case which he published in the *British Medical Journal* of 1885, unites the theory that an increase in volume of the spleen is a sign of great importance in the diagnosis of infantile tuberculosis. We tried to find what were the opinions of the authors of the classical text-books. Bazin,⁴ Bouchut,⁵ Rilliet and Barthez,⁶ d’Espine and Picot⁷ found that the spleen was large, infested with tubercles in the different tubercular affections of the newly-born, but gave this fact as of no clinical importance. Hensch alone of the modern authors of the most authority gives to enlargement of the spleen in miliary tuberculosis a place beside the indications given by auscultation, progress of the temperature, and cerebral excitation. Recently Dr. Leroux⁸ published a certain number of cases in which the enlargement of the spleen in tubercular infants was often found, but only at the autopsy.

* The numerals refer to the Bibliography at the end of this paper.

Passing now from the facts given us by human pathology to the results of experimental medicine, we could quote the experiments of Landouzy and Martin,⁹ which show that the generators could transmit to their products "not only a soil for tuberculosis, but a grain producing the disease." In these experiments, all the guinea-pigs who died during the progress of general tuberculosis had enlarged spleens infested with granulations. Now, this is an anatomical fact, found a great many times in the newly-born, that the tubercular infection attacks the spleen. This fact is found sometimes in the adult, under particular circumstances, and more constantly in tubercular animals. In the newly-born it is nearly the rule, and we shall see further on in what form and proportion. Now, from this general fact, are we permitted to draw a conclusion? This tendency to appear in the spleen is, as is known, a distinctive character of infectious diseases. We are then authorised to agree with Landouzy¹⁰, when in his teachings and publications he shows that, in the baby, tuberculosis generally tends to keep the aspect of a general disease more so than in older children. And still more so as, "neither pushing its localisations forward nor profoundly," it spreads them in nearly the entire economy without respecting a single organ¹¹. When tuberculosis spreads on this so-called special ground furnished by the baby, it is essentially of an infectious nature, which is shown by other characters usually apparent in most cases. For this reason Landouzy thought that tuberculosis might be introduced into the ætiology of certain broncho-pulmonary affections so frequent in the baby, and which, up to the present time, for want of knowledge of the cause, have been termed "*à frigore*." Bacteriological examinations which were made in these cases clearly showed that, if not always so, the bacillus was the cause (Thoan)¹² much oftener than had been suspected, even after an autopsy had been made. It is in the same order of ideas that tubercular fever may be classed,¹³ and as a good example of it I shall quote a case given by Queyrat:—"A. S., aged four months; healthy in appearance on entering the hospital with her mother, who was a confirmed consumptive; died two days later in the midst of convulsions, combined with fever and a greenish-coloured diarrhoea. The autopsy revealed psorenterie and four caseous glands; in these the bacillus was detected; the other organs microscopically intact were pronounced to be healthy. The clinical facts seem to be accumulated in this case to confirm this reducing hypothesis; the progress of bacteriology will some day make it a certainty, and thus do justice to the ideas of Landouzy.

Apart from these questions of ætiology, which are certainly of great importance, no one has determined exactly what benefit the clinician could gain from enlargement of the spleen. Nevertheless, tuberculosis is far from being easy to discover in a baby, and the conquest of a symptom is not to be disregarded. Can enlargement of the spleen in a very young child furnish an indication, and if so, what is the value of this indication? These are the points that we have tried to establish.

II.—It has appeared indispensable, in order to give this study a basis, to find out, for a given number of tubercular babies on which an autopsy was performed, how many had an enlarged spleen. The following numbers are what, in our opinion, represent approximately the weight of a normal spleen in the different epochs of a child's life during the first two years, and we consider an enlargement exists the moment that its weight exceeds these numbers:—

Under 1 month	the weight ranges between	6 to 10	grams.
Between 1 to 4 months	„ -	10 to 16	„
„ 4 to 1 year	„ -	10 to 20	„
„ 1 year to 2 years	„ -	20 to 30	„

This table is arranged after the numbers given by Frerichs¹⁴ and Parrot,¹⁵ as well as the results obtained by Mr. Lesage, which he kindly communicated to us, and also after some that we tested in Dr. Landouzy's service. Here then, these figures being taken as a starting point, is the result of our researches:—(1), 18 cases taken at the Tenon Hospital, in Dr. Landouzy's service, during the year 1888. The tubercular infants in this series died at the ages of from 3 months to 2 years. Out of these 18 autopsies, 11 times the spleen was found enlarged; out of the 7 in which no enlargement existed, 3 of these were, nevertheless, noted as presenting either tubercles, perisplenitis, or even an apparent increase in size (Cases I. to XIX.); (2), 11 cases of tuberculosis in babies, which were given us by Dr. Lesage—9 times the spleen was enlarged; out of these 9, 6 were decidedly tubercular, one was incompletely examined from this point of view, one was found intact, and lastly, one presented granulations which were considered, in the first place, as tubercular, but, examined by the microscope, were found to be a sclerosis (Cases XX. to XXX.); (3), in the cases published by Dr. Leroux there is no mention made of either the size or weight of the spleen; but out of 51 cases of infantile tuberculosis the spleen was noted as being tubercular in 38 of

them, and it is allowable to suppose that in the greater number of these 38 cases enlargement existed.

Let us now briefly state, although it does not directly touch our subject, under what form tuberculosis appears in the spleen. One sometimes finds the spleen simply enlarged, without apparent tubercular lesions. On section a very pronounced colour of dregs of urine is seen, and the corpuscles of Malpighi are very prominent. The microscope sometimes detects the presence of the granulations of Koster, or an embryonic infiltration of the corpuscles—we do not believe that anyone has ever found or looked for the bacillus. On the other hand, these cases are rare; usually the lesions are already very apparent when the organ is found enlarged. These are either patches of perisplenitis or granulations appearing through the capsule on both sides, or found on section disseminated in the pulp beside the prominent corpuscles of Malpighi. In one case these granulations, which appeared typical to the naked eye, were found by the microscope to be a small nodule of sclerosis (Case XXIX.).

III.—The spleen is accessible to the physician in two ways—by percussion and by palpation; but we would add at once that in the infant we prefer palpation. Percussion gives, even in the normal condition, a superficial dulness, but it is really a tax on one's patience to find it, and still more, as causes of error result from exaggerated pulmonary expansion when the child cries, and gaseous dilatation of the stomach or intestine so frequent at this age. Percussion is, to our mind, the most unreliable means of physical examination; we will, nevertheless, briefly state the results that it has given us in the normal condition. The dulness (which is only relative) measures about one finger's breadth in width, encroaching upon the eleventh, tenth, and ninth ribs. Its anterior limit is on a line extending from the anterior extremity of the eleventh rib, and directed towards the nipple. Its length in the antero-posterior direction is from two to three centimetres, but we repeat that this is too precise a statement for the usual conditions of infantile practice; the percussion rarely allowed us to be positive. Perhaps it would be more useful as in the enormous enlargements of malaria, &c., the spleen ascending towards the thorax, but it loses its value when it is necessary to discover the inferior limit of the organ; at this level it is hindered by the clearness of the stomach and large intestine. This is what Henoch¹⁶ says—"Usually affections of the spleen can be recognised with certainty only when they give

rise to a palpable tumour, extending beyond the left costal border. I expressly say *palpable*, because I have not an absolute confidence in percussion alone, at least in children." Palpation is then the procedure to adopt for exploring the spleen in children; it may even be admitted, as a rule, that if the spleen is felt by palpation it has increased in size. The best method to employ for this exploration is to place the pulp of the thumb parallel to the costal border on a level with the anterior extremity of the eleventh rib, and to press on the wall. According to a more or less considerable increase in the size, a small, regular, flattened, resistant mass is felt, or a tongue-like body, hitting against the finger, which by the pressure curves into the shape of a hook behind the costal border. Meteorism, by dilating the large intestine, may render this method of exploration impossible, and so may an abdominal effusion, by pushing the organ towards the thorax. A pleural effusion, on the contrary, pushes it down, and might cause one to suspect an existing enlargement when in reality there is none, or more considerable than it really is, supposing one to exist. If the child cries—and this almost always happens—the examination by palpation is still possible. One should wait, the finger on the costal border, until an inspiratory movement takes place; at this moment the abdominal wall can be depressed, and the spleen becomes accessible. By a little patience, and repeating the manœuvre several times in succession, a clear idea may be had of the organ under examination. Sometimes the enlarged spleen may be found projecting in the left hypochondrium, but these cases being absolutely exceptional, should not be counted on. Of Dr. Lesage's ten cases (XIX. to XXVIII.) clinical examination in four revealed enlargement of the spleen; microscopical examination found it in eight of them. More than once was the clinical examination hindered, even prevented, by tympanites or distension of the abdominal walls. It should be remarked that those cases in which the hypertrophy was found by clinical examination showed a considerable degree of development.

As a *résumé* of what has been said—when the spleen is big it is perceptible by palpation; more surely and easily by percussion. In order that the enlargement may be revealed, this enlargement must have reached a certain degree. In about two-fifths of the tubercular babies a spleen, much enlarged, may be found on a clinical examination (Cases XIX. to XXVIII.).

IV.—We have already said that tuberculosis is not easy to discover in very young children. If a proof is necessary, it will suffice, perhaps, to recall to mind the prejudice existing for a long time as to its extreme rareness. This is not astonishing, as we have none of the characteristic signs announcing phthisis as in the adult. We have often, on the contrary, “undetermined symptoms—ætiology varying according as the maximum of the attack is in the brain, lungs, or abdominal organs,”¹⁷ which are a series of ordinary phenomena, so ordinary that anything at all is sufficient to justify them. What rôle has not been attributed to cold, destitution, or intestinal worms! How many cases of tubercular disease in little ones, even at the present day, are put under the head of athrepsia! We should recall to mind that under this mask is often hidden a tuberculosis, and we should learn how to discover it. Clinical discovery of splenomegalia becomes a most useful aid. An enlarged spleen, accompanied by the symptoms already mentioned, indicates that an infectious disease is the cause, and in the greater number of cases, it must be said, the disease will prove to be tuberculosis. Nevertheless, the physician must deduct what belongs to phthisis and what to other infectious diseases which attack very young children. These diseases are numerous, and deserve to have their differential characters recalled. We speak from memory only of acute diseases—typhoid fever is rare at this age, scarlet fever and small-pox are easily recognised, measles merits a special mention; is it a tuberculosis entering the door opened to it by the measles, or is it the remains of infection which is at fault in a child attacked by a post-rubeolar bronchopneumonia? An enlarged spleen would make the balance fall on the side of tuberculosis, thus darkening an already serious prognosis. A child with hereditary syphilis has an enlarged spleen, and this is a fact on which Parrot¹⁸ and Lancereaux¹⁹ in France, and S. Gee²⁰ in England, have laid much stress. But if an enlarged spleen should here count as an element in the diagnosis, how much more important and characteristic are the other signs furnished by the disease. Without speaking of paternal or maternal antecedents, the epoch of the appearance of the symptoms at about the second or third month constitutes a very good reason for suspicion.

Then come the objective signs—coryza, erythema of all kinds, papules, plantar and palmar psoriasis, mucous patches around the anus, on the buttocks and genitals; and lastly, the physiognomy of the little patient, the arch of the eye-brows dark-coloured, and the

skin of the forehead coloured a dirty gray; the upper lip swollen, prominent, cracked; the under lip thin, stretched, and covered with fissures. This picture of a syphilitic child at least presents some distinctions which render it easy to recognise.

Now for a class of cases in which syphilis and tuberculosis are combined, and the phthisis runs a good chance of passing unnoticed, at least until the autopsy. This is what happened in Case XVI., where the signs of hereditary syphilis attracted the attention to such a point that the discovery of tuberculosis at the autopsy was a real surprise. Enlargement of the spleen ought to have, perhaps, awakened our suspicions if Parrot²¹ is to be believed when he says that in hereditary syphilis in children of over four months enlargement of the spleen no longer exists. Malaria, either acute or chronic, manifests itself in the spleen of the newly-born as in the adult. If acute, the intermittent febrile paroxysms do not escape an attentive physician. But in the newly-born it is the convulsive, choleraic, or broncho-pneumonic forms which sometimes mark it, and thus open the road for tuberculosis. In these cases the diagnosis is important, for if not interfered with they may become promptly fatal. The size of the spleen, which is larger than in malaria, may perhaps enlighten the physician, but the true touchstone is quinine. It can, and sometimes ought to be prescribed in very large doses for several days, and should be resorted to the moment that malaria is suspected. Chronic malaria and tuberculosis can easily be taken one for the other. The emaciation, dyspepsia, alternative constipation and diarrhoea are their symptoms in common. Nevertheless, paludism preserves its febrile paroxysms, which always have three stages—coldness, fever, sweat. In paludal cachexia, according to J. Simon, the emaciation is extreme, the child loses its appetite, and presents grave general troubles, such as anasarca, and the spleen is larger than in tuberculosis.

The symptoms of diphtheria are usually so very typical that we have no need (in cases presenting an enlarged spleen) of entering into the details of a differential diagnosis. From what I have said, and from the cases which follow, I shall formulate these conclusions—(1), enlargement of the spleen, when clinically discovered by percussion or by palpation, becomes, in the diagnosis of tuberculosis in the newly-born, a most valuable symptom, all the more so as at this age the phthisis, although frequently discovered, easily takes the character of a general infection, and runs the risk of passing undiscovered; (2), this sign is not pathognomonic, but it

acquires a great value when one can treat without doubt the cause of the infectious diseases which seize the young baby—as syphilis, paludism, typhoid fever, diphtheria, and all diseases which can appear in babies, but which are less frequent than phthisis.

The following 18 cases were collected in the service of Dr. Landouzy, while the last 11 cases are due to the kindness of Dr. Lesage, intern of the Paris Hospitals:—

CASE I.—Maria P., aged eighteen months. Entered July 11, 1888. Mother has phthisis. Recovered from measles a week ago; at present the child has fever and great thirst. Examination shows a dulness on the right side, bronchophony and rhonchus, a yellow-coloured diarrhœa, vomiting from time to time. Died July 17.

Autopsy.—Right lung: adhesion of the middle and inferior lobes; circumscribed patch of infiltration in the inferior part of middle lobe; small encysted ulcer; a zone of tubercular infiltration; caseous glands. Left lung: nothing. Weight of child, 5 kil. 100 grammes; of liver, 28 grammes—this organ is fatty—of spleen, 20 grammes, firm; kidneys enlarged.

CASE II.—Blanche D., aged five and a half months. Entered Feb. 22, 1888, with cough and intense fever; sick for one week. Numerous rhonchi in the entire thorax; clearness lessened.

Diagnosis.—Broncho-pneumonia. Died March 1st.

Autopsy.—Cadaver quite plump; neither erythema nor ulcerations. Weight, 4 kil. 515 grammes. Nothing to note in the brain, pericardium, or heart. Right lung presents lesions from the broncho-pneumonia, with infiltrated miliary tubercles, surrounding a caseous mass: exudative pleuritis; tracheo-bronchial adenopathy. Bacteriological examination shows that it is a bacillary pneumopathy; spleen, 20 grammes; liver, 260 grammes. A section of this organ shows it has a colour varying between a fatty and amyloid liver.

CASE III.—Maria P., aged nine months. Entered Feb. 28, 1888. Loss of elasticity under pressure of the finger; dulness; rhonchus in the right apex; alternative constipation and diarrhœa; prostration.

Diagnosis.—Broncho-pneumonia and meningitis. Died March 17, 1888.

Autopsy.—Cadaver not thin or phthisical, presenting neither ulcerations nor erythema. Meninges: tubercular encephalitis of the base. Lungs: on the right, interlobular adhesive pleurisy; at the apex, caseous nodule surrounded by granulations, and underneath by gray infiltration; on the left, congestion; tracheo-bronchial adenopathy, with more or less advanced caseation of the glands. Nothing in the heart. Fatty liver, weighing 230 grammes. No appreciable granulations, either under

the capsule or on section of the organ. Spleen, 20 grammes, enlarged, perisplenitis; granulations the size of a large pin-head. On section granulations are found scattered throughout the organ; fatty kidneys, with one or two granulations in the cortex; small intestine; some circular ulcerations the size of a pea; three or four granulations. Mesenteric glands are large, and more or less caseous.

CASE IV.—Georges P., aged nineteen months. Entered May 9, 1888. Cheyne-Stokes' respiration; dysphagia; inequality of the pupils; tonic convulsions; nystagmus; stiffness of the neck.

Diagnosis.—Tubercular meningitis. Died May 13.

Autopsy.—Cerebral œdema; ventricular hydrocephalus; a yellowish-green exudation under the interior arachnoid space; tubercular granulations of different sizes scattered along the Sylvian arteries, and especially in front of the protuberance and bulb. Lungs: congestion at both bases, no adenopathy; liver slightly enlarged and fatty—weight, 320 grammes; spleen enlarged, long—weight, 40 grammes. Peyer's patches are rose-coloured and projecting.

CASE V.—Armand A., aged twenty-two months. Entered June 8, 1888. His progenitors had tuberculosis. Fed by his mother's breast (she was healthy) up to the age of eight months. At eighteen months he was taken with a cough and became thin; no diarrhœa; no convulsions. On his entrance a dulness was found on the right side of the thorax and behind; a whistling respiration and subcrepitus. Death from tubercular cachexia, July 9.

Autopsy.—Weight, 8 kil. 565 grammes. Lungs: on the left scattered granulations and commencing infiltration; on the right some granulations at the apex; very advanced caseation and softening at the base; the peribronchial glands of a dull white colour, with a patch of softening. Liver, 700 grammes, absolutely fatty; superior perihepatitis; spleen, 41 grammes; long, enlarged, perisplenitis, some granulations. Mesenteric glands voluminous, caseous in different degrees; small intestine; some granulations. Peyer's patches red and tumefied.

CASE VI.—Alice L., aged one year. Entered Jan. 30, 1888.

Diagnosis.—Broncho-pneumonia of the right base.

Feb. 10.—Symptoms of meningitis; fever; rapid pulse; constipation; vomiting; convulsions of the four limbs, during the interval of which the child had the superior limbs contracted; strabismus. Died Feb 16.

Autopsy.—Weight, 5 kil. 315 grammes. Brain: nothing but congestion. Liver enlarged, 230 grammes; perilobular sclerosis; perihepatitis in the antero-superior part of the right lobe; no tubercular granulations to be seen by the naked eye. Spleen, 20 grammes, firm; no perisplenitis; no granulations; small intestine. Peyer's patches slightly tumefied.

Nothing in the uterus and annexes. Right lung; patch of broncho-pneumonia at the apex; peribronchial tubercular granulations.

CASE VII.—J. C., aged one year. Entered July 7, 1888, with appearance and diagnosis of athrepsia. Is the second child of an Italian mother with phthisis in the second stage. Mother aged eighteen years, and in labour for the first time at fifteen and a half years old. Child nursed by the mother, and has been sick since the age of five months. Since this age the child has increased only one pound in weight, always has a greenish-coloured diarrhoea. In the right lung is found dulness and loss of elasticity under pressure of the finger. Whistling respiration; short cough and some sub-crepitus; fever. Died July 11, 1888.

Autopsy.—Cadaver white and very thin; weight, 3 kil. 770 grammes. Lungs: nothing on the right side; in the left lung, in the inferior lobe, is a caseous nodule surrounded by a zone of congestion and granulations. The tracheo-bronchial glands, on the left side only, are enlarged, caseous, and some contain a puriform mass. Liver, 270 grammes and fatty. Perihepatitis on the superior foci. No granulations appreciable. Spleen, 25 grammes, surrounded by a perisplenitis; two large granulations on the convexity of the organ. Kidneys fatty; granulations in the cortical substance; large caseous mesenteric glands; small intestine. Peyer's patches are injected, ulcerated with some tubercular granulations in the neighbourhood.

CASE VIII.—F. G., aged two years. Entered April 24, 1888, for oppression in breathing and a cough. Has been sick for a month; slight fever; good appetite; coughing by spells, interrupted, resembling whooping-cough a little; expectoration thick, creamy, and large in size. Looks slightly puffed; no albumen in the urine; dulness at the base of the right lung, with rhonchus and diminution of the vascular murmur.

Diagnosis.—Broncho-pneumonia. Death, April 27, after twelve attacks of coughing.

Autopsy.—Weight, 8 kil. 220 grammes. Liver, 490 grammes; perihepatitis; large and small granulations scattered throughout the organ, and especially on the surface. Spleen, 40 grammes; thickness, 9 centimetres; length, 5 centimetres. Perisplenitis, large flat granulations throughout the organ. Kidneys present sub-cortical granulations; some of the mesenteric glands are enlarged; three circular ulcerations in the intestine, with some small granulations. Lungs—Congestion in the left; in the right lung, tubercular infiltration of the middle lobe, with dilatation of the bronchi, which are surrounded by caseous glands.

CASE IX.—Julia A., aged three and a half months. Entered March 31, 1888, with symptoms of meningitis. Fever; tonic convulsions of arms and legs; clonic convulsions of right arm. Died April 13.

Autopsy.—Cadaver plump, weighs 5 kil. 220 grammes. Brain, both lateral ventricles distended, and both Sylvian arteries are filled with fine granulations. Tracheo-bronchial glands, tumefied and caseous; some are softened. Lungs—Granulations and infiltration, especially on the right side. Liver, 175 grammes, covered with granulations on both faces; on section appears marble-like, milky-white and light red. Spleen, 18 grammes, long; 15 granulations are to be found. Mesenteric glands enlarged and caseous. Peyer's patches injected, enlarged without granulations.

CASE X.—L. S., aged one year. Entered Feb. 14th, 1888. Fed by his mother's milk; she is wet-nurse at the St. Louis Hospital. His father coughs and is not well. At six months old child had a bronchitis; has never been well since. For the last four days has been worse; he complains of his head and cries often. On entering, had the following symptoms: anorexia, fever, crying, headache, vomiting, constipation, dilatation of the pupils, strabismus and convulsions.

Diagnosis.—Tubercular meningitis. Died Feb. 20.

Autopsy.—Weight, 7 kil. 365 grammes; cadaver is in good condition and not thin, no erythema, and appears not to have suffered. A yellowish white exudation is found in the anterior arachnoid space, fine granulations surrounding the branches of the Sylvian artery and on the pia mater; no isolated tubercle, no hydrocephalus. Lungs—sub-pleural infiltration; a single caseous nodule of old date in the superior lobe of the right lung, which is surrounded by granulations and a zone of congestion. Tracheo-bronchial glands caseous and infiltrated. Spleen—46 grammes; thickness, 10 centimetres; breadth, $5\frac{1}{2}$ centimetres. Granulations on both sides; no perisplenitis. Kidneys fatty, granulations under the capsule. Peyer's patches injected.

CASE XI.—J. S., entered August 23rd, 1888, aged fifteen days. Born at term. Mother has lost five brothers out of nine from tuberculosis; she herself is well, and feeds her child entirely from her breast. Child has a conjunctivitis and thrush; has a yellowish colour. Child remained three months in the hospital, and died with symptoms of athrepsia.

Autopsy, Nov. 22, 1888.—Adhesion of both pleuræ which contain fluid; bronchial glands caseous and large as peas; interlobular pleuritis, pseudo-membranes, pleural granulations; caseous nodule firm and white; nodule of infiltration in the apex of the superior right lobe; granulations scattered throughout the left superior lobe. Liver, 185 grammes; capsule of Glisson covered with granulations as large as pin-heads; tissue is firm, slightly fatty. Spleen—length, 6 centimetres; breadth, 5 centimetres; weight, 30 grammes. Perisplenitis of anterior edge and internal surface; fine granulations on the external surface. Left kidney shows some granulations in the cortex.

CASE XII.—M. D., aged nine months. Entered March 9, 1888. Father coughs; mother has antecedents of hereditary tuberculosis; and has already lost one child of broncho-pneumonia with convulsions; she is manifestly a consumptive, and was probably so at the time she became pregnant with our little patient, who is her fourth child. She has been pregnant six times, and had two abortions. This child was fed on the breast for four months; at five months the mother, being fatigued, gave him the bottle; at this epoch he contracted measles, and has coughed ever since. On entering he had the following symptoms:—Pale, asphyxia; takes to the bottle pretty well, slight constipation, no vomiting; no convulsions, but frequent movements of rotation of the head; difficult breathing, often with noisy inspirations. On percussion, sub-crepitus in both bases, with loss of elasticity; dullness in both apex; rhonchus in the entire thorax, which is deformed. Died March 18.

Autopsy.—Weight, 4 kil. 340 grammes. Thorax—double pleural adhesions, more so on the left; false membranes, which are not vascular. Tracheo-bronchial glands caseous. Small caseous nodule at the base of the left lung, surrounded by gray granulations; a mass of gray granulations in the inferior lobe without any nodule of broncho-pneumonia. Liver—190 grammes; fatty miliary tubercles on the surface and on section. Kidneys—a few miliary tubercles in the capsule. Spleen—20 grammes, with tubercles on the surface. Nothing in the heart. Intestines—Peyer's patches swollen, and mesenteric glands caseous; psorenterie.

CASE XIII.—G. F., aged ten months. Entered March 10th, 1888. Child of a consumptive mother (who had signs of softening); child appears to be well and is with her mother, who is under treatment; child died March 29.

Autopsy.—Weight, 5 kil. 900 grammes. Intestine—Peyer's patches prominent, an ulcerous crateriform patch is granulating. Spleen—25 grammes, with one granulation. Kidneys—nothing. Liver—260 grammes. Right lung—a reddish gray nodule of infiltration in the superior lobe; two glands the size of a walnut are commencing to be caseous.

CASE XIV.—A. G., aged seven months. Entered March 28th, 1888, in full measles eruption. Sick for five days. Intense fever, vomiting, has had diarrhoea the preceding days, but none since admitted. Slight ocular catarrh, frequent cough, sub-crepitus in right lung, rhonchus on both sides, more distinct on the right. Died April 2.

Autopsy.—Weight, 7 kil. 270 grammes. On the right is a tracheo-bronchial adenopathy. In the right lung is a congestion containing in the centre of the middle lobe a zone of caseous infiltration; in the left in the inferior lobe is a pseudo-lobular broncho-pneumonia, in the middle of

this lobe is a gray peri-bronchial infiltration. Nothing in the heart. Liver—320 grammes, a dozen granulations. Spleen—80 grammes, no perisplinitis, granulations on the internal surface. Granulations on the kidneys. Small intestine—Peyer's patches are enlarged. Nothing in the brain. Bacteriological examination showed micrococci scattered throughout both lungs, and the bacillus of phthisis in the right lung and in the caseous glands.

CASE XV.—P. T., aged fourteen months, admitted September 9th, 1888. The little patient has just had the measles, which commenced two weeks ago. On the third day of her illness, the physician treating her made a diagnosis of broncho-pneumonia and applied a blister. When admitted the child was very thin, had lost strength, intense fever, much coughing and dyspnoea. On the right is found sub-crepitus, loss of elasticity under finger pressure, whistling rhonchus and bronchophony. Respirations, 60; pulse, 120; temperature, 39.4° C. Died September 12.

Autopsy.—Weight, 6 kil. 345 grammes. Liver—400 grammes, anæmia of the organ; no granulations whatever. Spleen—30 grammes, nothing. Kidneys—congestion under the capsule. In the right lung is a nodule of pseudo-lobular broncho-pneumonia, in the inferior and superior lobes patches of exudative pleuritis, and in the left lung broncho-pneumonia of the inferior two-thirds. Nowhere is a granulation to be found.

CASE XVI.—E. M., aged four months, admitted September 25th, 1888. She has hereditary syphilis. Her mother had two children by another father; both are strong and well. Mother was well until the fifth month of her pregnancy, when, from this epoch, she became thin and feeble, pains in the bones with swelling of the left knee and side of the forehead. Roseola on the hips, abdomen, and inferior part of the thorax; during six months had mucous patches on the vulva and œdema of the labia majora. Delivery at seven months; after accouchement all symptoms disappeared for some time, and the patient felt better. On being admitted, there are found general adenopathy, alopecia and crusts on the hair, plantar and palmar psoriasis, mucous patches of pharynx, tongue, lips, vulva and umbilicus. Lungs—a slightly feeble vascular murmur. Three years ago the father had a chancre and two bubos (one on each side) which suppurated and were opened; to-day may be found two large cicatrices. He has observed nothing since these either as to physical or functional signs. On examination some axillary and epitrochlean glands are found enlarged. The child was born at seven months. During the first month was in good health, although weak. The second month had some digestive trouble (constipation, swelling of abdomen). At the beginning of the month had small pimples on the gluteal region which bled easily. At the consultation at the Hospital St. Anthony, he was ordered liq. Van Swieten and starch

baths; the eruption lasted one week. At the end of the month, stools were regular and abdomen less swollen. The third month his strength returned and he had good health during this month. The fourth month, during the three first weeks, general condition was bad; emaciation. A doctor being consulted ordered an emetic and frictions with "Neapolitan ointment" ("onguent napolitain" of the French "Codex"—an ointment composed of metallic mercury, 500 parts; benzoated lard, 460 parts; and white wax, 40 parts). This the mother had continued up to the present time. The doctor also told the mother to stop nursing (on account of her health and the lack of milk), but the child would not take the bottle, so that this recommendation was not carried out. About ten days ago the eruption of the pimples which continued was almost limited to the legs. The mother had noticed only about five days before that the child had patches on the tongue, but when the doctor had examined it the spatula made it bleed. Since the frictions have been made the child has two or three stools a day, but does not vomit. Coughs for last two weeks (a little like whooping-cough); her sister, aged five years, has developed whooping-cough a few days before she commenced. Examination, on being admitted, showed considerable emaciation and enlarged abdomen; cutaneous eruptions, nearly entirely on the legs and under the umbilicus; they are of two kinds:—1. Pustules of various sizes (a large pin-head to a millet seed), violet with an areola of paler hue; some have an epidermic flange, others have a very small purulent point in the centre. 2. Deep irregular indurations from $1\frac{1}{2}$ to 2 centimetres in breadth; in certain parts on their level are small, softened fluctuating tumours of violet colour; in other parts pustules pure and simple; at any rate these superadded elements do not correspond to the entire induration. The indurations are located on both knees, the gluteal region, and the calf of the left leg. The left thigh is doughy and voluminous, with elevation of the local temperature. The articular surfaces of the knee appear to be increased in size. The extension of the left leg on the thigh is incomplete even when force is used to produce it. The mother noticed two days ago indurations and troubles in the movement in the left knee. Over all the points of the diseased legs no pain is to be discovered; no enlarged glands are to be found. Spleen—percussion gives no clue; palpation allows the organ to be felt descending three fingers' breadth below the costal brim, and it may be easily taken between the fingers; its breadth seems to measure three fingers' breadth. Liver—percussion shows it to be situated a finger's breadth above and below the costal brim; nothing by palpation. Lungs—behind and in front percussion is negative; behind, the inspiration is harsh; in front, inspiration is sibilant; nothing else. Mouth—two mucous patches on the tip of the tongue, one on the middle of the lower lip; no ulceration of the frænum; nothing abnormal in the pharynx. Sept. 27.—The points where the indurations with fluctuating tumours were found are entirely softened;

and, on incising them, a grayish-brown fluid flows out mixed with drops of oily substance; on pressing, the pus was squeezed out and with it a light yellow-coloured mass of sphacelated tissue, all these lesions are subcutaneous. The slight œdema of the left leg which existed yesterday is most pronounced to-day. Sept. 30.—Died at two o'clock in the morning without anything to be noted.

Autopsy.—Weight, 2 kil. 825 grammes. Liver—190 grammes; congested with steatosis produced by nodules having a porto-biliary situation, but more distinct in certain parts; numerous granulations; density increased. Gall-bladder shrunken and containing a small quantity of amber-coloured bile. Spleen—31 grammes; surface slightly uneven, with a dense thickening of the capsule; increase in size; section only reveals a small purulent nodule near the lower extremity. Kidneys (left 24 grammes, right 24 grammes) appear to be paler than normal; one or two granulations on the surface of the right kidney. Small intestine—Peyer's patches are slightly prominent; no psorospermia; mesenteric glands are moderately tumefied. Testicles—nothing abnormal; epididymus light yellow and spongy as in the normal condition. Left femur—bone-like thickening of the periosteum, forming a bony cylinder-shaped sheath, covering the bone and separated from it by a nearly uninterrupted sinus. Brain—a small caseiform mass the size of a pea, irregular and soft, situated at the upper part of the right hemisphere in the frontal zone. Tongue—at the tip the three mucous patches still exist; nothing else to be noted. Heart—24 grammes; two small transparent spherical nodules entering into and placed between the posterior segment and the right segment of the aortic valves; as to appearance they do not differ from the neighbouring corpora Arantii; nothing in the pericardium. Left lung—superior lobe is infiltrated in its upper half by caseous matter, separated in places by bands of dense tissues of a milky tint; the inferior lobe has a cavity extending from the surface of the hilum, adhering to the pleuræ which are fused together and consequently to the thoracic walls—this cavity appears to be empty with a dry surface, slightly granular; an important branch of the pulmonary artery extends through it giving off smaller branches. Right lung—splenisation of the greater part of the upper lobe; nuclei of broncho-pneumonia and granulations scattered throughout the organ, becoming more numerous towards the base; superficial sub-pleural granulations are present. Before opening the lungs they had the appearance of solidified masses, being hard, red, with an unpolished look on the under side and lower portions, on account of the existence of a pseudo-membranous pleuritis, more marked on the left side. The tracheo-bronchial glands tumefied, caseous. Only one contains a purulent cavity limited by a fibrous membrane—this gland appears to be in communication with the cavern in the lung. Histological examination of the organs: Left lung—the usual lesions of

caseous pneumonia ; the tubercles of pneumonia essentially of the irregular type as to shape and size, with two usual zones, &c. Heart—no lesions of the muscular fibres ; no inter-fascicular sclerema. Liver.—numerous nodi scattered in groups along the porto-biliary tract without relation to the tubercles ; periporto-biliary adipose tissue in moderate quantity, but varying according to the part, and in some extending into a certain number of the neighbouring biliary lobules. Other than these two lesions there is no noticeable modification of the vascular or cellular tissues. Kidneys appear perfectly normal, excepting one or two tubercular nodi situated on the covering of the vessels forming the vascular vault. Spleen—filled with tubercular nodules ; the corpuscles of Malpighi are extremely tumefied, and reveal all the stages from simple embryonic infiltration (rare) or combined with one or two nodules (rare also) to the transformation into a large tubercle (the most frequent). No trace of tuberculosis in the tongue.

CASE XVII.—B. M., aged six months ; mother Italian, who has had smallpox ; father healthy. Admitted June 27, 1888, with her mother, who has typhoid fever. Child appears to be well ; has been fed on her mother's breast up to date. Died Sept. 6, after two or three days of cough, fever, and diarrhœa.

Autopsy.—Weight, 5 kil. 315 grammes. Lungs : nothing on the left ; on the right the inferior lobe is covered on the entire length of the posterior border and external surface with fibro-purulent pseudo-membranes. The inferior two-thirds are occupied by a caseous mass, partly softened, pseudo-lobular caseous broncho-pneumonia. Low down in the right ilium is a caseous gland the size of a large pea ; above an oblong gland measuring 3 centimetres, containing a yellowish white cheesy mass. Liver 235 grammes. Spleen 30 grammes ; no tubercular granulations. Kidneys healthy.

CASE XVIII.—J. C., aged twenty months. Father healthy ; mother had a sister who died, aged thirty-three, of tuberculosis. She has lost three children out of five—one of meningitis and one from enteritis. Personally she appears healthy. When fourteen months old the patient had an eruption of pimples over the entire body ; at sixteen months, that is to say, in March, 1888, entered the hospital for the first time for a left-sided broncho-pneumonia, and remained some weeks ; cough, rhonchus, vomiting, diarrhœa, fever, and dyspnœa. In August, 1888, admitted again for a broncho-pneumonia—this time on the right ; left much better. Entered again October 10, 1888. On examination the following was obtained :—Child quite stout, but with flabby flesh ; very pale complexion ; hair and eyelids very long. From time to time momentary cyanosis is remarked—cries, intense dyspnœa, frequent cough. At the time of

examination is quiet, owing to fatigue. Auscultation, in front on both sides mucous râles, principally inspiratory, varying from one moment to another; at both bases dulness quite marked, with loss of elasticity under finger pressure; souffle nearly entirely inspiratory, of pleural type, with resounding cry, and direct and fine crepitations extending to the lowest portion. Behind, in both sub-spinous fossæ, mucous râles, principally inspiratory, are found.

15th Oct., evening.—Calmer, less oppression. Auscultation, same signs in front; behind, feeble respiration towards the base, with heavy rhonchus in the upper region of the left side. On the right, in the upper part, normal clearness; dull rhonchus as on the left; dulness still exists in the lower part, but is more limited; souffle entirely expiratory, sharp, with resounding cry; fine sub-crepitant râles accompanying inspirations.

22nd, evening.—Coughs very much; does not swallow the sputum, and her mother succeeds in making the child expectorate; auscultation reveals nothing abnormal either behind or in front on the left. On the right, normal clearness everywhere; a few râles in the upper parts; below, the souffle is lessened, and hardly perceptible on account of the resounding ægophony of the cry. In the right arm-pit finer sub-crepitant râles are heard in the entire organ, with resounding ægophony of the cry; a few dull sub-crepitant râles in the middle.

27th Nov., evening.—Behind, on the left, in the supra- and sub-spinous fossæ, souffle and cavernous inspiration without râles; on the right, at the base, sonorous sub-crepitant râles, with equal rhythm, with an inspiratory souffle and resounding ægophony of the voice. In front, whistling respiration; under the arm-pits same signs as behind. For four days there has been a puriform expectoration containing hardly any air, reminding one of liquids excreted by caverns; cough resembling whooping-cough. Died Oct. 31.

Autopsy.—Nothing in the brain. Lungs—the tracheo-bronchial glands form large masses, greatly compressing the bronchus, especially on the left, where a mass of intra-bronchial glands form a projection under the pleura, separating the lobes. All these glands are caseous or tuberculous in different degrees. Quite numerous miliary granulations exist in both lungs; splenisation, and probably also atelectasis, increasing towards the base; nearly complete in both inferior lobes. The middle region of both lungs contains quite a number of emphysematous lobules. Hypertrophy of the heart; congestion of the liver, with two or three granulations on the surface. Congestion of the kidneys; cortical substance slightly pale and opaque; no tubercles visible. Spleen—moderate hypertrophy; corpuscles of Malpighi distinct; mesenteric glands moderately tumefied; a few are cheesy; tumefaction of Peyer's patches; psorenterie.

Microscopical Examination.—Spleen—embryonic infiltration of the

corpuscles of Malpighi, which are distinctly disengaged from the rest of the tissue of the spleen; no tuberculosis present. Search for the bacillus in different sections, by Ehrlich's method, is negative; kidneys normal. Apart from the parts where tubercles exist, the histological examination of the lungs confirms the diagnosis of splenisation.

CASE XIX.—R., aged fourteen months; admitted Nov. 20, 1887. Chronic pulmonary tuberculosis; râles and dulness over the right apex; the rest of the lung normal. Child very thin; spleen, on percussion, does not appear increased in size, and is not to be felt on palpation. Died Dec. 16.

Autopsy.—Both lungs infiltrated with tubercles; a slight tracheo-bronchial adenopathy; one caseous gland; all the other organs are normal. Spleen of normal appearance, but weighs 42 grammes.

CASE XX.—Eve, aged four months; admitted Dec. 21, 1886. Pulmonary tuberculosis; râles to be heard everywhere; sub-dulness over both apices; cachexia, tympanites, frequent bilious diarrhœa. Child very thin; spleen not perceptible. Died Dec. 23.

Autopsy.—Pulmonary tuberculosis, with scattered granulations; tuberculosis of the peritoneum; fatty liver; spleen presenting a normal appearance; weight 28 grammes; no perisplenitis; no tuberculosis.

CASE XXI.—Child, aged five months; entered in Dec., 1887.

Diagnosis.—Pulmonary tuberculosis; cachexia; spleen is not perceptible. At the autopsy, pulmonary tuberculosis in the form of patches of broncho-pneumonia; tubercular tracheo-bronchial adenopathy. Spleen 25 grammes, presenting nothing special.

CASE XXII.—Child, aged six months; entered hospital in full tubercular cachexia, with a souffle in different points, and scattered mucous râles.

Autopsy.—Foci of broncho-pneumonia in both lungs; tracheo-bronchial adenopathy. Spleen weighs 32 grammes.

CASE XXIII.—Wall, born Oct. 16, 1887; entered Nov. 22, 1887. Generalised râles of bronchitis; dulness over both apices in front and behind. Cachexia; child very thin; abdomen normal. Spleen felt on percussion, and seems increased in size; dulness extends over three fingers' breadth. Palpation reveals nothing.

Autopsy.—Tubercular broncho-pneumonia; spleen infiltrated by tuberculosis; perisplenitis; weighs 30 grammes.

CASE XXIV.—F. P., born July 5, 1886; entered hospital Oct. 23, 1887.

Diagnosis.—Pulmonary tuberculosis; the notes give the following:—

Dulness over the apex of right lung in front and behind; left apex normal; auscultation; souffle over the right apex, occupying the upper third of the lung; a few sub-crepitant râles at the base, left lung; normal respiration. Some scattered râles, especially at the base. Child very thin; cachexia; cerebral functions are normal; liver and stomach normal. From time to time slight vomiting; increased appetite. The child often presents, with appreciable cause, attacks of bilious diarrhoea, lasting from five to ten days. During the calm periods the intestinal functions are normal; tympanites of abdomen, sonorous and resistant on palpation. On account of the tympanites the spleen cannot be reached. On percussion the spleen is apparent, having a dulness covering three fingers' breadth; an increase in the size of the organ appears evident. The pulmonary tuberculosis follows a slow evolution up to Nov. 21—date of the death. During this evolution the symptoms changed but little; the fever persisted, oscillating between 38° and 39° Centigrade.

Autopsy, Nov. 22.—Tubercular broncho-pneumonia in the right apex, with a small cavern. Diffused infiltration of tuberculosis in the rest of the organ; some scattered tubercles in the left lung. On the side of the neck a large gland is noted; those of the hilum are increasing in size, and one of them is manifestly caseous. Stomach and intestines are normal, as are also the mesenteric glands; liver enlarged, but no tubercles are visible. Gall-bladder contains a great quantity of very green bile; spleen enlarged, infiltrated with tubercles, which are found on the surface of the organ; weight, 54 grammes. Other organs normal.

CASE XXV.—L. B., born Sept. 12, 1887; entered Nov. 21, 1887. Symptoms—cachexia; child thin, having the athrepsia type; absence of digestive troubles; vomits from time to time from bad alimentation. Abdomen normal, soft, no tympanites; no mesenteric adenitis; stomach normal; liver normal. The predominant lesion is in the lung; dulness in the inferior quarter of left lung; clearness over the rest of both lungs. In the middle of the induration a souffle is heard; sub-crepitant râles at the periphery; a few sub-crepitant râles in the rest of the lung. Slight cough, very marked dyspnoea; respirations, 68 per minute; absence of expectoration. Temperature, Nov. 21— 38.5° C. in the morning, 40° C. in the evening; pulse, 110 to 120.

Diagnosis.—Localised tuberculosis of the lungs; the other organs normal. Spleen not accessible on percussion, but there is a slight dulness over it which is difficult to estimate. Palpation does not permit of it being felt, so that the conclusion was that the organ was, clinically speaking, normal. Duration of disease, six days after entrance to hospital; persisting fever and pulmonary lesions.

Autopsy, Nov. 27.—All organs normal, excepting the lungs; the left is infiltrated with tubercles, being more abundant at the base, in the form of a mass of pseudo-lobular broncho-pneumonia. Right lung shows a few tubercles in the apex; no broncho-pneumonia. The glands of the hilum are larger than normal, and two of them are noted as distinctly tubercular. The tuberculosis appears localised in the lungs; spleen normal, weighing 10 grammes.

CASE XXVI.—J. P., aged six months. Entered Oct. 6, 1886. Child thin and cachectic; pulmonary tuberculosis most evident. Sub-crepitant râles scattered throughout both lungs; dulness over both apices; a grumbling sound in the right apex; the other organs normal. Spleen, examined by palpation, shows nothing abnormal; percussion reveals the region of the spleen to have apparently a greater extent than the normal; no tympanites of the abdomen. Died Oct. 16.

Autopsy.—Patches of tubercular broncho-pneumonia in both apices; peri-bronchial tubercular adenopathy. Spleen, notably hypertrophied, surrounded a tubercular perisplenitis. The section of the organ reveals some tubercles scattered here and there; weight, 48 grammes.

CASE XXVII.—L. E., aged four months. Entered Dec. 21, 1886.

Diagnosis.—Pulmonary tuberculosis and digestive troubles, probably also tubercular. From the information given by the mother, the child has been ill for a month. On admission, auscultation showed a dulness over the entire left lung; a marked souffle of induration in the upper third; râles of bronchitis in the two lower thirds. Sub-dulness over the apex of right lung; clearness in the rest of the organ. On auscultation, scattered and generalised râles of bronchitis are heard throughout the organ. Brain, liver, and stomach normal; abdomen distended, painful on pressure; tympanites. Bilious diarrhoea, without vomiting; five to six stools in the day. The swelling of the abdomen prevented palpation of the spleen; percussion showed that the organ was not perceptible, as the region was tympanitic. During the two days at the hospital the fever oscillated between 39° C. and 40° C. Died Dec. 23, in the last degree of marasmus.

Autopsy, Dec. 24.—Both lungs presented the most evident tuberculosis of the broncho-pneumonic type, in the right apex and the entire left organ. Spleen normal, no tubercles; weight, 22 grammes. Liver appears enlarged; gall-bladder contained about 60 grammes of very green bile. Stomach normal; the intestines present no alteration (the diarrhoea appears to depend on the condition of the liver), the tympanites only exists. The other organs normal.

CASE XXVIII.—D., aged three months. Entered Oct. 28, 1886. General bronchitis; dulness over both apices behind and in front.

Tympanites, diarrhœa, vomiting; spleen is found by percussion to have two fingers' breadth. Nothing obtained by palpation.

Autopsy, Dec. 11.—Lungs infiltrated with tubercular granulations; some scattered points of broncho-pneumonia. Caseous patches in both apices. Spleen enlarged, and infiltrated with granulations; weight, 40 grammes.

CASE XXIX.—Child, aged five months. Pulmonary tuberculosis, with patches of broncho-pneumonia in the left apex. A few tubercles in the right apex; other organs normal. Spleen enlarged, weighing 26 grammes; nothing abnormal on the surface. On section, small grayish irregular points are seen scattered throughout the organ which look like tubercles, but the histological examination showed that they were small nodular indurations, and not tuberculosis.

LIST OF WORKS CONSULTED.

[The numbers correspond to those in the text.]

- ¹ "Soc. Méd. des Hôpitaux." April, 1886.
- ² Idem. April 17, 1886.
- ³ Queyrat. "Paris Thesis." 1885.
- ⁴ "Traité de la Scrofule." Paris. 1861. Page 418.
- ⁵ Bouchut. "Maladies des Nouveau-nés."
- ⁶ Rilliet et Barthez. "Maladies des Enfants." Tome III., page 860.
- ⁷ D'Espine et Picot. "Maladies des Enfants." Page 573.
- ⁸ "Leroux in Études Experimentales et Cliniques sur la Tuberculose." 1888. Tome II., Fasc. I.
- ⁹ "Revue de Méd." 1883. Page 1,014. Also "Études Experimentales et Cliniques sur la Tuberculose." 1887. Fasc. I.
- ¹⁰ Loc. cit. and Lectures given at the Faculty of Med. of Paris.
- ¹¹ Loc. cit. et Bull. de la Soc. Anatomique. 1879. Page 21.
- ¹² "Revue de Méd." Dec., 1885.
- ¹³ "Note sur la Tuberculose." Société Méd. des Hôpitaux. April, 1886.
- ¹⁴ Frerichs, cited by Besnier in Art. Rate. "Dict. Encycl. des Sc. Méd."
- ¹⁵ "Syphilis Hereditaire et Rachitis."
- ¹⁶ Henocho. "Leçons Cliniques." Paris. 1885. Page 454.
- ¹⁷ Queyrat. Loc. cit.
- ¹⁸ "Bull. de la Soc. de Biologie." 1872.
- ¹⁹ "Traité de la Syphilis." Paris. 1886.
- ²⁰ S. Gee. *Lancet*. April, 1867.
- ²¹ Parrot. Loc. cit.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON BACTERIOLOGY.

1. *Our Unseen Foes, and How to Meet Them: Plain Words on Germs in relation to Disease.* By A. WHEELER. Bristol: John Wright & Co, 1891. Pp. 84.
2. *Bacteria and their Products.* By GERMAN SIMS WOODHEAD, M.D. (Edin.), &c., &c. With 20 Photo-micrographs. London: Walter Scott. 1891. Cr. 8vo. Pp. 459. Contemporary Science Series.

THE ever-increasing importance of the subject of bacteriology, and the widely-spread interest it arouses, even outside the pale of science or of medicine, are exemplified in the literature of the past month, which brings us two endeavours—widely different, it is true, in their aim and scope—to popularise this branch of knowledge, and to put intelligibly before the lay reader, as clearly and concisely as may be, the best that is known and thought in the scientific world of to-day as to the relations of “germs” to disease and to Preventive Medicine. Too little is attempted in the one; too much (for the general reader) is accomplished in the other.

1. Mr. Wheeler’s little book is written from a purely popular standpoint. It is sketchy and superficial, but, on the whole, the statements contained are fairly accurate. Its chief aim seems to be to ground the public in the principles on which the action of remedies such as Koch’s “tuberculin” and Pasteur’s “rabin” (if we may coin the word) is based. To a certain extent it fulfils that object, though the number of diseases touched upon renders a full account of any individual example of infective disease an impossibility in the space allotted. To those, however, who have absolutely no knowledge of germ-diseases, the book may prove a stepping-stone to fuller acquaintance, and may stimulate a desire to know more about that wonderland whose story reads like the pages of a fairy tale. A few errors need correction. *Schizomycetæ* does duty for *Schizomycetes*; *Bacterio termo* occurs more than

once for *Bacterium termo*. It is *not* necessary to enable bacilli "to flourish in the body" that "large quantities" should be present. It is not true that "when a human being is bitten by a rabid dog he will, *if left alone*, almost certainly die from hydrophobia;" but such exaggerations are meant to impress the popular fancy. There are more than "three *unliving* ferments" concerned in the processes of digestion, and the account is so misleading it would be better omitted. We regret, also, to notice the prominence given to the popular belief as to a "strumous diathesis." The author writes of tuberculosis:—"Whilst the disease is *not* hereditary a predisposition to it is. To put it plainer, we may say that whilst the offspring of consumptive parents or parent need *not* get the disease, he will be born with a highly suitable soil for it." Daily research is gradually showing conclusively that a true hereditary transmission of the *Bacillus tuberculosis* plays an important factor in the ætiology of the disease, and the doctrine based on the researches of Johne on foetal calves, and supported by pathologists as eminent as Klebs and Baumgarten, has recently received striking support from a case published by Birch-Hirschfeld, which supplies the missing link in the chain of evidence. A woman, aged twenty-three, died from general tuberculosis. A few minutes after death the foetus was removed, and was found to be dead, though living a short time previously. Portions of the liver, spleen, and kidney inoculated into rabbits and guinea-pigs produced tuberculous disease, though only in the foetal liver-capillaries could tubercle bacilli be found, while, on the other hand, the villous spaces of the placenta were crowded with bacilli. The small amount of infective material present in the foetus may, the author thinks, account for the latency of "inherited tuberculosis" (*Wiener medizinische Blätter*, April, 1891). If this theory becomes firmly established, as seems likely, it will revolutionise the accepted ætiology of many specific infective diseases.

2. Dr. Woodhead's book travels, as we have hinted, on very different lines. Professing to be a "popular" work, and intended to aid in illumining the ignorance that veils "contemporary science," it is in reality a very complete handbook to the history, methods of development, and morphology of bacteria in general, and of pathogenic bacteria in particular. The introductory chapters deal with the morphology of bacteria, their classification, modes of development, and life-history, together with an account, mainly

historical, from the date of the classical observations of Leeuwenhoeck on the bacteria of the mouth in 1683, down to the most recent observations that the most improved scientific instruments and culture methods of to-day have as yet given to us. By many this portion of the book will be read, perhaps, with the greatest interest, showing, as it does, in outline the assiduous research and the painful climbing from step to step by which the present position of the science has been attained. In the chapters devoted to fermentation, which Dr. Sims Woodhead regards as "the key to the whole position" of bacterial working, a very full and instructive account is given of the work of Pasteur in this field. Indeed it may be said that Pasteur, following up the work of Pollender and Davaine in anthrax, and keeping more closely to the chemical interchanges effected by various yeasts and fungi, was the father of the chemical pathology of the present day, and that had it not been for his pioneer footsteps no path would have been formed to lead to the brilliant discoveries of Koch and his school. Pasteur did for medical science what Stanley has done for Africa; it only waits now for the African Koch to follow the lead and make the dark places plain.

Naturally in a book intended for popular reading we find the dreaded and mysterious scourge of cholera accorded a foremost place. The suddenness of its visitations, the powerlessness of medical skill to combat it, and the awfulness of its death-record, have made it in these countries at least an overshadowing horror which has no parallel outside the "plagues" of the middle ages. We are glad to see that Dr. Woodhead is no wavering believer in the *Spirillum* of Koch as the *causa causans* of the disease. If ever a conclusion was arrived at by the closest logical deduction from the firmest scientific premises it was in the case of the originally-named "comma-bacillus" as the cause of Asiatic cholera. And yet what a howl it called forth from observers of six-months' standing who had not borne the burden and heat of the day! If further proof were wanted, the cases of accidental inoculation and subsequent (though happily not fatal) attacks of cholera which have occurred in man might be sufficient to convince the most obstinate sceptic. But if Cupid is blind he shares the misfortune with many scientific *observers* whose remote point of vision is the limit of their own cramped and obtuse perceptive faculties.

Through still more devious and intricate wanderings were the ways of the *Bacillus typhosus*, the cause of enteric fever, brought

to light. The difficulty of staining this organism, and its occurrence in solitary isolated clumps, enabled it for a long time to elude the vigilance of observers. In connection with this, Dr. Woodhead mentions a plan which may prove useful to inquirers. "These bacilli," he writes, "are said to be stained with difficulty, but I have found that if the sections in which they are present are first allowed to remain for about ten minutes in a one-fifth per cent. solution of corrosive sublimate, and then stained by Gram's method, the bacilli are most deeply stained, although Fränkel and other observers state that the colour is invariably discharged if Gram's method be used." This, however, is only part of the difficulty, for although the bacilli are found in clumps in the adenoid follicles, in the spleen, and commonly in the mesenteric glands, it is only, as Flügge says, "after the examination of a large number of sections that one or several of these deposits can be found." The beneficial effects of heat and sunlight as destructive of typhoid poison are strikingly impressed by the experiments of Janowski, and "Duclaux's dictum that fresh air and sunlight are two of the most powerful agents that we have with which to combat the onslaught of disease cannot be too strongly insisted on" (p. 201).

"The enormous percentage of deaths in our colder northern latitudes" for which tuberculosis is responsible, makes the subject of its prevention one of widespread interest to both lay and scientific readers. The history of the disease, its causation by a specific micro-organism, and its spread by contagion, are now so universally recognised that we need not here dwell on the facts which have led to this conclusion, but prefer to insist on those preventive measures and some statistical results which have followed them, on which Dr. Woodhead so wisely insists. The experiments of Dr. Cornet are fully referred to—viz., his systematic examinations of the dust in rooms, hospital wards, &c., where phthisical patients had been confined, with the result that in every case inoculation produced typical tubercular disease in animals. From his experiments it is also clearly shown that the bacilli are not *expired*, but are *expectorated*, by the patient, and that if proper measures for the reception and disinfection of the sputa are taken the risks of infection are reduced to a minimum. It is careless expectoration on floors, into handkerchiefs, or into open vessels which contain no disinfectants, and the subsequent drying and mixing of the expectorated matter with the atmospheric dust, which cause the danger, otherwise slight, of personal contagion. Dr. Woodhead gives very

fully the precautions to be adopted to prevent the spread of the disease, and says—"As a single example, we may take the Grand Duchy of Baden, where there was a diminution of deaths from tuberculosis from 3·08 per 1,000 inhabitants in 1882 to 2·80 per 1,000 in 1887, or no less than ·28 per 1,000. *Were this to be equalled in the British Isles, and the patients were not carried off by other diseases, the saving to our community would be nearly 10,000 lives per annum.*" We commend the statement we have italicised to the careful consideration of every physician and sanitarian, with the injunction that upon them the carrying out of this hygeian dream rests. Of Koch's "cure" Dr. Woodhead speaks in judicious terms, deprecating any too hasty condemnation, and recognising the fact that at least we have in it a remedy which reacts on, or calls into reaction, tuberculous tissues, and as such may lead to more accurate and wide-reaching results when its definite nature and active principle are more accurately known and can be more exactly applied.

As regards the contagious nature of leprosy, the author, strangely enough, seems more doubtful. He regards the cases of inoculation, either accidental or intentional, as ambiguous—dismissing them with scanty notice. He argues that the chain of evidence is incomplete in the absence of pure cultures and successful inoculations, being evidently unaware that pure cultures of the bacillus have been obtained by members of the Leprosy Commission at present in India, and that, in the analogy of cholera, it is now only a question of time until the proof of the constant relationship of the bacillus to the disease is followed by the proof of its constant causative action. Dr. Woodhead justly dismisses in a couple of lines the absurd and untenable "fish theory," which would never have gained a moment's serious attention from any rational observer had it not been ushered into publicity under the brilliant ægis of Mr. Jonathan Hutchinson. Whether the latter, with his acute reasoning powers, sees the fallacies in his own line of argument is a point we had rather not be called on to determine.

Very full and exhaustive chapters follow on Actinomycosis, Glanders, and Anthrax; and though their interest is mainly veterinary, yet the occasional occurrence of each of these affections in man renders an acquaintance with their history and pathogeny a matter of general importance. In regard to actinomyces—the "ray fungus"—Dr. Woodhead follows the conclusions of Prof. M'Fadyean, and observes—"It must therefore be looked upon as

possibly one of the cladothrix algæ, or more probably as one of the schizomycetes in which the cladothrix formation occurs, and which has been described as closely allied to the *Streptothrix Försteri*." Much space is naturally given to the anthrax bacillus, which, as the earliest described and perhaps the best known of all species, serves as an excellent ground lesson for all students of bacteriology. Dr. Woodhead gives the only correct description of these bacilli, which, so far as we are aware, has yet found its way into any English text-book, as they are usually described as having sharply rectangular ends. We quote his description in full:—"In the unstained specimen there will be found lying between the red blood corpuscles a number of short rods of the size above mentioned, each of which has slightly rounded ends; sometimes also there may be seen a delicate transverse mark running across the middle, this being especially well marked when the rods are longer than usual. . . . In some cases there is also at the point of junction, on each side of the transverse line, a somewhat oval area slightly stained, so that when a number of these rods are placed end to end without being separated they have very much the appearance of a finger with the joints slightly enlarged, or of a bamboo cane with its characteristic thickenings placed at almost regular intervals." This formation is well seen in the accompanying micro-photograph—one of the few reproductions in the book which conveys any idea of the object represented. Once more, in connection with this parasite, we find the beneficial effects of air and sunlight—Nature's great patent purifiers that so many in these lands are unwilling to confide in, but prefer to rely on their own puny efforts to *keep out* invaders by closing every vent-hole or broken pane through which health might flow in. "The only other physical condition," writes Dr. Woodhead, after describing the various chemical and thermal means of exterminating these organisms, "that appears to be fatal, or at any rate injurious, to anthrax spores is strong sunlight; this appears to deprive them in whole or in part of their powers of further development in a most remarkable manner, always causing distinct attenuation of their pathogenic virulence before completely destroying them."

The chapter on Tetanus gives a good description of the bacillus of Nicolaier, and the illustration shows well its "drum-stick" or spore-bearing form. Although this bacillus has never been demonstrated in the earth-inoculations which provoke the disease, it is

constantly found at the seat of inoculation, and the recent experiments of Kitasato leave no doubt as to its causal relationship. It is curious that the poisonous qualities of garden earth should long have been known to savage tribes, and in the hands of the New Hebridean savages should have been responsible for the deaths of Commodore Goodenough and Bishop Patteson, while in "Darkest Africa" arrows tipped with earth furnished forth the poisonous darts of Stanley's race of pigmies.

Perhaps to the physician the most practical part of the work is the chapter on Diphtheria. One important outcome of recent researches is that the organism known as the Klebs-Löffler bacillus can attain its full virulence only when acting conjointly with other organisms, such as the streptococci found in the throat in scarlet fever, measles, and suchlike diseases. The persistence of the bacillus in the mouth for some time—as long as fourteen days—has been demonstrated by MM. Roux and Yersin, to whom much of our knowledge is due, and "they give the good practical advice that diphtheritic patients who are becoming convalescent should not be allowed to associate with their school-fellows, playmates, or families for at least a fortnight after the membrane has disappeared; and that it is quite as important to wash out the throat freely three or four times a day with disinfecting lotions as that the clothes and bed-linen should be thoroughly disinfected." We also learn that moist heat is the most destructive disinfecting agent we possess, and that "by far the best method of disinfecting clothes, the floor, the walls, and furniture, is by the use of a liberal supply of boiling water." Two other quotations from these valuable observations and we have done:—"The best method of arresting the spread of diphtheria is to recognise the disease as early as possible; consequently a precise diagnosis should be made by microscopic examination of the false membranes, and this should be confirmed by cultivations on blood serum." This gives results in 24 hours when incubated at 33° to 35° C. "The attenuated virus of diphtheria is widely distributed, and it readily regains its virulence. It is, therefore, necessary at the very commencement of simple forms of throat disease, and of those associated with measles and scarlatina, to practise careful and frequent swabbing of the throat with antiseptics."

The chapter on Hydrophobia gives an interesting account of the Institut Pasteur and of the methods of biological research and of inoculation practised there. Chapters on the Bacteria of the

Mouth, of Colour and Phosphorescence, on Poisonous Albuminoids and Alkaloids, on Vaccination, and on the Examination of Bacteria in Air, Earth, and Water, conclude the volume. We have already referred so fully to the most important parts of the work that it is only necessary to remark that, except in the chapter on ptomaines (as was inevitable in a work of this class), all the subjects mentioned are adequately described. An appendix of 44 pages of small print gives a brief account of the necessary apparatus and staining methods, together with short accounts of the most important bacteria, principally non-pathogenic, not embraced in the body of the work. A full and accurate index of authors and subjects, and a bibliography attached to each chapter, enhance the value of the work. The type and printing leave much to be desired in respect of clearness, and for the illustrations (the majority of which even to a trained microscopist are unintelligible) we accept Dr. Sims Woodhead's apology in the Preface that "photo-micrographs can be but imperfectly reproduced by any photo-mechanical process now available." But is the art of wood-cutting extinct or inadequate? There are many typographical errors which we have noticed, and which need correction in a future edition, but they are of subsidiary importance and will hardly confuse any reader. We regret Dr. Woodhead still adheres to the uncouth "puncture cultivations" and "stroke cultivations" as translations of the German "*Stich-culturen*" and "*Strich-culturen*." Why not *stab* and *streak cultures*?

Apart from these minor defects we can cordially recommend the book as one well brought down to the latest knowledge of a subject of paramount interest and of daily increasing import to the science of Preventive Medicine.

Minor Surgery and Bandaging, with an Appendix on Venereal Diseases, arranged in the form of Questions and Answers. By EDWARD MARTIN, A.M., M.D., Instructor in Operative Surgery, University of Pennsylvania. 82 Illustrations. London: H. K. Lewis. 1891. 8vo. Pp. 166.

THIS manual differs from most in use in being arranged in the form of question and answer. Whether such a plan is the more likely to catch the eye and impress the memory of the student is perhaps open to doubt. However, no fault can be found with Dr. Martin's answers; and if it is at all possible for a student to learn

from a book what he ought to grow thoroughly familiar with by daily observation and practice in hospital wards and out-patient rooms, then perhaps he will find this manual as convenient for the purpose as any other. The diagrams are good, the explanations are intelligible, and the type and paper are such as we find in American books, and look for in vain on this side of the Atlantic.

A Treatise on Massage, Theoretical and Practical; its History, Mode of Application and Effects, Indications and Contra-indications, with Results in over Fifteen Hundred Cases. By DOUGLAS GRAHAM, M.D.; Fellow of the Mass. Medical Society. Second Edition, revised and enlarged. New York: J. H. Vail & Co. Pp. 342.

WE congratulate Dr. Graham on this second edition of his book on Massage. The volume has been thoroughly revised and somewhat enlarged, the latter by "numerous additions, many of these confirmatory of statements previously regarded as doubtful," and by two new chapters, one on local massage for local neurasthenia, the other on the treatment of scoliosis by means of massage. The first two chapters give a history of massage, and quotations from the most ancient times show that Billroth is correct when he says that massage is as old as surgery itself. This historical sketch is one of the most complete we have yet seen; it is evidently the result of much research by the author himself, and not simply transcribed from the works of others. Two interesting items, long lost sight of in old literature, have been inserted for the first time—the successful employment of "violent frictions" by News as a *dernier ressort* in the case of Mary Queen of Scots when she was supposed to be on her death-bed, and the immediate relief of an attack of acute gout experienced by Pope Clement VIII. at the hands of Saint Philip Neri.

Following the historical chapters is a chapter on "The Mode of Applying Massage." Physicians unacquainted with the technique cannot do better than to carefully study this chapter for themselves. It is full of clearly-expressed directions to guide the uninitiated, and the directions given are the result of experience, and consequently sound; as the author says, "*savoir faire, gumption, and rule of thumb*, all go towards making a manipulator skilful." The physiological effects of massage are next described, and the experiments of Prof. Ewald and of Dr. Eccles are quoted, which

show, by means of salol, how the process of absorption in the intestinal canal is stimulated by massage. Dr. Graham also informs us that he has found that "the points that give the best contraction to percussion are also the same points that give the best contraction to the faradic current, and it is often surprising how much better contraction may be obtained from percussion than from a faradic current."

Chapter V. treats of massage in the neurasthenia and anæmia of women. The author's experience of it in such cases corroborates fully the estimation in which this method of treatment is now held all over the world. In the author's opinion, the employment of any lubricating material, such as vaseline or cocoa-nut oil, is unnecessary. "It is a positive hindrance to massage on account of the slipping preventing the hands and fingers from seizing, grasping, and kneading the tissues." In Chapters VI. and VII. massage of the internal organs is discussed, and the uterus and its surroundings occupy first place. Those who, in this country, objected so strongly a short time ago to the employment of massage in these regions would do well to read this chapter, and to bear in mind the author's observation that "massage of the pelvic organs should be entrusted to those alone who have 'clean hands and a pure heart.'"

The next three chapters deal respectively with massage in general neurasthenia, local neurasthenia, and in affections of the central nervous system. In Chapter XI. we find Wolff's method of treating writer's cramp by massage and gymnastics explained, with a report of 285 cases. "Of all the vexatious cases," says the author, "that have come to me for massage in an experience of twenty years of this treatment there have been none more trying than confirmed cases of writer's cramp and allied affections." The general result of his experience is that there are cases which neither massage nor anything else will benefit. Again, there are cases which are cured only by a prolonged and persistent course of treatment, which often taxes the patience of both doctor and patient. "But with quite recent or incipient cases of writer's cramp and similar troubles my experience has been much more cheerful, the patients recovering safely, quickly, and pleasantly with a very few massages, so that they remained in blissful ignorance of how near the rocks and shoals of disability they had been sailing."

The author corroborates (in Chap. XII.) the good results obtained by massage in neuralgia, sciatica, and peripheral paralysis,

and (in Chap. XIII.) in muscular rheumatism, muscular rupture, elephantiasis, and œdema.

The addition of a chapter on the treatment of scoliosis by means of massage is a great improvement in this second edition.

He borrows largely from Dr. Lauderer's paper on the subject at the Congress of the German Society for Surgeons. It is unfortunately too much the practice to treat all forms of spinal curvature by means of a Sayre's jacket or other form of spinal support. The author thus briefly sums up the position:—"For the preservation of the spinal column in a natural position healthy muscles are necessary. Habitual scoliosis arises from superincumbent weight, the original cause of which is weakness of the muscles, and therefore the treatment has to be directed to them."

We quite agree with him in this view, for to confine such muscles in a rigid apparatus which keeps them at rest only weakens them the more, and increases the deformity which it was intended to improve. Undoubtedly the best treatment for these weakened muscles is massage. Dr. Lauderer's method of treatment by a combination of massage and gymnastics is given in this chapter.

Dr. Graham speaks most enthusiastically (in Chap. XV.), and we believe in not a whit too optimistic a manner, of the benefit to be derived from massage in the treatment of sprains. From a record of over seven hundred cases he shows that recovery ensues by this method in one-third of the usual time under other methods of treatment. Equally good results are recorded in the next chapter of the results of massage in hydrarthrosis. In fourteen cases of *hydrops genu*, Zabudowsky obtained good results, in recent cases, in from six to eight days; in old ones, from one week to five months. A long quotation from Barwell's "Diseases of Joints" is given to show the passive stage of *strumous* synovitis in which not merely pressure and massage, but passive motion is useful; and in this view he is supported by Billroth. In Chapters XVII. and XVIII., which conclude the volume, massage in rheumatic arthritis, and massage of the head, face, eyes, ears, and throat are respectively dealt with.

On the whole, the book before us is one of considerable scientific merit and of much practical use. We doubt if any unprejudiced reader, after its perusal, will not feel a fresh impetus towards learning the *modus operandi* of massage and of practically testing it for himself. The book is written in a most readable form, interspersed with apt quotations, not only from medical

works but from the larger field of general literature. Each chapter has a poetic headline—generally very happily quoted. Thus, at the head of Chapter III., on the mode of applying massage, we find—

“ Vor den Wissenden sich stellen
Sicher ist's in allen Fällen.”

Again—

“ This is an art which does mend nature,
But the art itself is Nature,”

introduces us to the chapter on the physiological effects of massage.

The quotation from Crabbe which closes the volume is charmingly naïve. Does Dr. Graham allude to his own powers as a skilled masseur in these lines :—

“ And chief the illustrious race, whose drops and pills
Have potent powers to vanquish human ills ;
These with their cures a constant aid remain
To bless the pale composer's fertile brain ;
Fertile it is, but still the noblest soil
Requires some pause, some intervals of toil ;
And they at last a certain ease obtain
From Katerfelto's skill, and *Graham's* glowing strain.”

Electricity in the Diseases of Women, with Special Reference to the Application of Strong Currents. By G. BETTON MUSSEY, M.D. ; Physician to the Gynæcological Department of Howard Hospital, &c. Second Edition, revised and enlarged. Philadelphia and London : F. A. Davis. 1890.

WE cannot find any clue to the name of the pious Hebrew who introduced into the Jewish Ritual the thanksgiving, “ We praise thee, O Lord, that we are not women.” He must have been a gynæcologist. And until we took to the study of gynæcology we did not fully appreciate the propriety and force of the thanksgiving. Now, when shelves of bulky volumes detailing methods of torturing the gentler sex surround us, we are ready, like the Hebrews, to offer the thanks.

Wombs, it would appear, are as much subject to the vicissitudes of medical fashion as bonnets are to the whims of the milliner. One time their interior is scraped out by Von Humbug ; burnt by a variety of caustics by his successor, Von Swindle ; douched with hot and cold fluids by Von Fraud ; and they are now submitted to electric torture. The women, poor souls, submit patiently, hopefully, and silently to the Berlin student and the German

method. She no more thinks of questioning the skill of the gynecologist than she does the taste of the milliner; by both she is treated to the latest foreign fashion.

The present volume advocates the latest improvement (?) in uterine therapeutics, and the author, like every other gynecologist, conclusively proves by recorded cases that his method is the proper method. No state or condition of uterine trouble can, if we accept the teaching, resist the beneficent action of electricity. Well, we suppose this fashion also will pass away, but while it lasts those who like to give it a trial will find Dr. Mussey's book an excellent guide to the therapeutics of electricity.

Materia Medica and Therapeutics: an Introduction to the Rational Treatment of Disease. By J. MITCHELL BRUCE, M.A. Aberd., M.D. Lond., F.R.C.P. Lond.; Physician and Lecturer on Medicine and Therapeutics, Charing Cross Hospital, &c., &c. Nineteenth Edition. London: Cassell & Co. 1891. 8vo. Pp. 582.

OUR task in reviewing the nineteenth edition of Dr. Mitchell Bruce's *Materia Medica and Therapeutics* is an easy and a pleasant one. We need do little more than record the fact of its publication and mention that this Manual now contains all the "Additions" to the British Pharmacopœia of 1885, which were made in Nov., 1890, together with a fairly full account of the actions and uses of the new official drugs and preparations. There are some omissions, however. Thus, under the heading "Glusidum," we are not told that saccharin is a very valuable preventive of cystitis, as well as a curative agent in this affection, when caused by an ammoniacal condition of the urine. This was pointed out by Dr. James Little in a paper read by him before the Section of Medicine in the Royal Academy of Medicine in Ireland, on April 20, 1888. [See Volume LXXXV. of this Journal, pages 493 and 542.]

Again, the mode in which glycerine acts as a laxative is not explained as it should be, when mention is made of glycerine suppositories at pages 316 and 317.

We are gratified to find that Dr. Bruce has corrected certain errors and inaccuracies in his book to which we drew attention, as in duty bound, when noticing it in the number of this Journal for September, 1885. [Vol. LXXX., No. 165, Third Series, p. 227.]

Adopting the closing words of that review, we have again to express the opinion that, "taking it all in all, it is a trustworthy book to place in the hands of a student, and represents a distinct advance in the method of imparting instruction in therapeutics."

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland, comprising Lists of the Papers read during 1890 before Societies engaged in Fourteen Departments of Research, with the Names of their Authors. Compiled from Official Sources. Eighth Annual Issue. London: Charles Griffin & Co. 1891.

THE title of this excellent Year-book sufficiently tells of its scope and importance. It aims at affording an account of scientific work done in the various departments throughout the year, being a record of progress, and a convenient handbook of reference. It saves time, and drives away perplexity. The medical section is very full, and the list of papers read before the many societies connected with medicine is very long, proclaiming the industry, if not the originality, of many members of the profession.

Transactions of the Southern Surgical and Gynæcological Association. Volume III. Third Session held at Atlanta, Georgia, November 11, 12, and 13, 1890. Published by the Association. 1891.

A SOUTHERN Association meeting in Atlanta involuntarily recalls some of the most eventful issues of the Inter-States War. It was whilst giving instructions to Colonel Prestman in relation to his work on the intrenchments of Atlanta that at 10 p.m. on the 17th of July, 1864, General Joe Johnson received Cooper's fatal telegram telling him he was superseded—Cooper killed the Confederacy at Atlanta. Hood, the bravest of the brave, meteor-like, blazed for a time and startled his country's foes by his brilliancy and quickness; but nothing could compensate for Johnson's loss, and "Advance and Retreat" is but a long plea of extenuating circumstances for a huge blunder. Southerners have, however, nothing to regret or be ashamed of—their cause was their country's, it had the sanction of truth and justice, and they supported it with a valour and gallantry that compelled admiration from all—even from their enemies.

This time Atlanta is occupied by Southerners seeking the victories of peace, and right royally are they welcomed on behalf of the citizens by the Hon. John B. Glenn, Mayor of the city.

Although only three years in existence, the Association has one hundred members, amongst whom are many of the most distinguished surgeons of America.

The opening address was given by the President, Dr. George J. Engelmann, of St. Louis, Mo., who commenced by complimenting the outgoing President, Dr. Hunter M'Guire, on the brilliant and valuable Address with which he opened the session the previous year at Nashville, Tenn.—a compliment well deserved, for the Address, which we are glad to see has been published by the Southern Historical Society, Vol. XVII., is, as Dr. Engelmann declares, a model of clear, terse, logical writing. The subject of the Annual Address was, "Southern Women," viewed from a gynæcological standpoint, and it treats of the necessity of young women being educated in the physiological peculiarities of their sex. It is a valuable, plain statement of the evil results of ignorance begotten of false modesty of mothers and nurses, and is well worthy of careful reading by physicians and the public, especially the female portion, generally.

That Southern surgeons should have a bias in favour of gynæcology in the country of M'Dowell, Battey, and Marion Sims, is but natural, and Dr. Engelmann worthily upholds their reputation in the specialty.

It would appear invidious to mention some of the papers read at the meeting, and omit others, but from the subject-matter of the paper, if from nothing else, we cannot pass over Dr. M'Fadden's paper on the "Treatment of Thoracic Abscess." It is just the style of paper we like. It is original, and in support of his theory the author lays the current medical literature of the world under tribute. One author who many years ago dealt with this subject is, however, omitted—to wit, John Bell, of Edinburgh, Scotland—a man who seems never to have secured that position to which his extraordinary abilities entitled him, a fact which we have often thought may be due to the incapacity of copyists to alter or condense his style. His works are now very scarce, and a Southern surgeon may be forgiven for not being familiar with them, even though it was from him that M'Dowell, of Virginia, the ovariologist, learned that dexterity and acquired the self-reliance that stood him in such good stead in the Kentucky village where ovariectomy

was first demonstrated, to be included amongst the recognised operations of surgery. We wish the Association all success, and we are glad to see that already the New South gives promise of worthily upholding the traditions handed down by men whose names are household words.

Southern Historical Society Papers. Vol. XVII. Edited by R. A. BROCK, Secretary of the Southern Historical Society. Richmond, Va.: Published by the Society.

THE present volume appropriately opens with Dr. Hunter M'Guire's Address, delivered at Nashville, Tenn., to the Southern Surgical Society. Army medical officers, as a rule, do not receive their proper mead of praise for their anxiety, skill, and fatigue during war time, and we read with pleasure Dr. M'Guire's eloquent commendation of the medical officers, not alone of the famous Second Corps and the army of North Virginia, but of the whole Confederate Army. Their resourcefulness, their indefatigable industry, their skill, and their success under the most unfavourable circumstances, deserved the highest praise, and no person more fitted for the task than the great surgeon who encountered the difficulties on all the eastern battlefields, whose facile pen has so graphically described the last days of his friend and chief, the immortal Stonewall Jackson—the glory of the Commonwealth of Virginia and the hope of the Confederacy!

The second paper is by Dr. Peyer Porcher, and was delivered to the survivors of the Confederate surgeons of South Carolina. Towards the termination of the war Dr. Porcher served in Petersburg, where month after month Grant, with reckless indifference, hurled tens of thousands of mercenary troops against the thin line of patriots, until—killed by the exhaustion of killing—Richmond became his. To Grant nothing was sacred. The homes of the defenceless and the extemporised and permanent hospitals were shelled. His mercenaries emulated the “bummers” of Sherman, and both disgraced and degraded manhood. Of the Confederate soldier he writes:—

“There was no one so uncomplaining as the Confederate soldier. . . . In your daily rounds to offer him relief he gazes upon you, but does not complain that you pass him by, asks for nothing, does not bemoan his fate, nor murmur at the insufficiency of either food or attendance. He may lay sick under a broiling sun, in a heated tent; or

wounded, he may languish in the hospital amid the dying and the dead, surrounded by everything to appal even well men, yet the mere stripling possessed his soul unterrified, and neither uttered cry nor groan."

In his article, "Andersonville Prison," Dr. Isaac H. White very fully places before the profession and the public the true statement concerning the Georgian prison. Although it comes late, it is a very welcome refutation of the hysterical utterances of the Rev. Henry Ward Beecher, and a wholesome counterblast to the "Narrative" of 1864 which Walden, Wilkins, Mott and others published in Boston—a veritable shilling shocker—freely illustrated. At a time when General Lee had animal food only twice a week, and when recruits from the first families of Virginia hardly knew its flavour, and the defences of Vicksburg were manned by soldiers fed on mules' flesh, delicacies sent from Federal friends were passed to the prisoners of war by the Confederate authorities; and their prisons were located in the fertile plains of Georgia, where food was abundant. That they were properly cared is evidenced by the fact that of 35,000 of them placed in Andersonville, only three died of enteric fever. It is, however, interesting to know how these 35,000 lived, including, as they did, a large percentage from the slums of Northern and European cities—men who had no more interest in the question at issue, and were as ignorant of principle and humanity, as the mercenary troops of the mediæval ages. These men plundered their fellow-prisoners, and to facilitate their theft often murdered the infirm. The Confederate authorities had some of these murderers tried by juries of their fellow-prisoners and hung. The Federal authorities, who were everlastingly proclaiming their love of the negro, refused in the latter years of the war to exchange prisoners, but encouraged fanatics to defame an honourable and brilliant race. Dr. White thus writes—"The prisoners at Andersonville received the same rations that were furnished the Confederate Guard." Medicines in 1863 were selling in Richmond at enormous prices:—Quinine, 100 dols. an ounce; opium, 100 dols. an ounce; and even at that price the supply was insufficient, consequently the prisoners, like the Confederate troops, felt their want; but the Army Medical Officers, as far as it was in their power, minimised the evil.

The remainder of the volume possesses but little matter of professional interest, but the general reader will find in the account of the life and actions of General Lee and the Hon. John W. Daniel's "Life, Services, and Character of Jefferson Davis," an

interesting and brief account of two men whose names will be forever associated in American history as having sacrificed all that men hold dear for principle—a principle which was embodied in their laws, was a tradition in their country since the landing of the Pilgrim Fathers, and had the sanction of truth and justice.

Lewis's Pocket Medical Vocabulary. Second Edition, thoroughly revised. London: H. K. Lewis. 1891. Pp. 314.

WE consider this Pocket Vocabulary to be very well put together. It contains quite enough words for all practical purposes; the definitions and explanations of them, though necessarily short, contain as much information as could be expected from a small work, and, as far as we can see, are accurate and reliable; and the binding, printing, and whole style of the book leave nothing to be desired. This second edition has been thoroughly revised, new terms being introduced, while some that have become practically obsolete have been omitted. A table of the most commonly used affixes and suffixes derived from the classical languages has been added, and will be found useful.

We can warmly recommend this little book to all who require a short but reliable Medical Vocabulary.

MEDICAL COLLEGES IN AMERICA.

THE Illinois State Board of Health, which is active in efforts to improve medical education, and which has recently decided to recognise no foreign diploma which does not qualify the holder to practise in his own country, publishes the following statistics of medical schools in the United States and Canada. It will be seen that matters are steadily improving in America. There are now 148 medical colleges of all kinds in the United States and Canada, there being 135 in this country and 13 in Canada, and of these 129 require certain educational qualifications for matriculation. In 1882, such preliminary knowledge was required by only 22 colleges. The number of colleges that to-day require attendance on three or more courses of lectures is 85, as compared with 22 that made such requirements in 1882. During the term from 1882 to 1891 the average duration of the lecture term has increased from an average of 23·5 weeks to 26·3 weeks. In 1882–83 there were 8 colleges that held terms of but sixteen weeks. The number that give such limited instruction at the present time is not given, but the number of colleges whose term is six months or more is 111.

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By HENRY T. BEWLEY, M.D., Univ. Dubl., F.R.C.P.I.; Assistant Physician to the Adelaide Hospital, Dublin.

THE PATHOLOGY OF PAROXYSMAL HÆMOGLOBINURIA.

DR. S. MONCKTON COPEMAN has made some important observations and experiments on seven cases of this disease. He exposed the patients to cold under varying circumstances—cold air, cold baths, hand immersed in cold water, &c.—and before and after this exposure made repeated examinations both of the blood and of the urine.

He concludes that “one of the first and most obvious phenomena in this disease consists in an enormous and often extremely rapid destruction of the red corpuscles, such destruction depending on the direct influence of cold.” The decrease in the number of corpuscles within a few hours varied from 129,000 to 824,000 per cubic millimetre. When the blood was examined after the exposure, rouleaux were absent, the corpuscles were variable in size and shape, granular masses of hæmatin were observed in the plasma, which latter was tinted red by free dissolved hæmoglobin. This dissolved hæmoglobin was also found in the serum produced by a blister. If the exposure to cold be slight, and the consequent destruction of corpuscles be not great, he finds that serum-globulin and no hæmoglobin appears in the urine, the hæmoglobin being used up in the system, probably by being converted into urinary and bile pigments. If the blood destruction be greater too much hæmoglobin is set free to be used up in this way, and both albumen and hæmoglobin appear in the urine. The hæmoglobin may appear in the urine within half an hour of the exposure to cold. In some cases, instead of oxyhæmoglobin, methæmoglobin or acid hæmatin were found in the urine. This change depends on the period that elapses between the excretion of blood pigment by the

kidneys and its examination. The pigment is always excreted by the kidneys in the form of oxyhæmoglobin. If this substance remains for a short time in contact with the acid urine in the kidneys or bladder before being examined, it changes into methæmoglobin; a longer action of the urine changes it into acid hæmatin. It is worthy of note that all Dr. Copeman's patients had suffered from syphilis in one form or another.—*Practitioner*, September, 1890.

ON THE ACTION OF TRIBROM-PHENOL IN TYPHOID FEVER.

Of the various substances which have been employed in this fever in order to diminish the production of poisonous bodies in the intestinal canal, Dr. Purgotti gives the first place to tribrom-phenol ($C_6H_2Br_3.OH$). He gave from 45 to 60 grains of it daily. No ill results were observed: heart, kidneys, lungs, and nervous system remained unaffected. The course of the disease seemed to be much shortened. The drug was used in 11 cases. Of these, 5 recovered before the 10th day of the disease; the remaining cases between the 14th and 20th day. Tribrom-phenol does not possess any rapid antipyretic action: the temperature does not begin to fall until 2-4 days after the commencement of the treatment. In order to obtain the best results the drug should be given very early in the course of the fever.

From his experiments on animals, Dr. Purgotti concludes that the drug is free from poisonous action, and that much larger doses might be given with safety.—*Il Morgagni*, 12, 1889.

TYPHOID FEVER WITHOUT INTESTINAL LESIONS.

At a meeting of the Société des Hôpitaux de Paris, March, 1890, Dr. Vaillard described the following case:—A soldier after an attack of influenza became very ill, suffering from stiffness in the neck, headache, coma, constipation; temperature, 104° F. Death on the 10th day. At the autopsy were discovered hyperæmia of meninges and lungs, and enlargement of spleen, while the intestines were perfectly healthy. Cultivation experiments showed the presence of an organism, which appeared to be the bacillus of typhoid, in the spleen, lungs, and medulla. A streptococcus was also present. Vaillard believes that this was a case of enteric fever without the usual symptoms.

Dr. Chantemesse stated he had found the typhoid bacillus in a dead-born foetus, whose mother aborted during an attack of

typhoid. Its intestine was perfectly healthy. It had died of typhoid septicæmia. In another case which he had observed, a man died of typhoid. Many typhoid bacilli were found in his organs, but the intestine was perfectly healthy, with the exception of one ulcer of the size of a lentil.

These observers therefore conclude that there may be in rare cases a typhoid septicæmia without any local lesions.

SYPHILITIC DISEASE OF THE LUNGS.

Prof. Haslund distinguishes two forms of pulmonary syphilitic disease :—

1. The diffuse form—an increase of the interstitial connective tissue. The affection always begins at the root of the lung and extends thence.

2. The gummatous form—one or many gummata scattered through the lung, except the apex, which is rarely affected. Both forms often co-exist.

The course of the disease is sometimes very rapid, death occurring in from two to six months. In other cases the disease causes no symptoms, and the presence of pulmonary disease may be discovered only at the autopsy. In the early stages there are no physical signs; later on, in some cases, dulness on percussion over the root of the lung is noticed, and inspiration becomes rough and sharp. Towards the end respiration acquires a cavernous character.

Syphilitic lung disease is difficult to diagnosticate during life. The distinction from phthisis is difficult. The diagnostic points on which Prof. Haslund relies are :—1. Absence of tubercle bacilli. 2. Localisation; the apex is rarely affected in syphilis, almost always in tuberculosis. 3. The downward progress of the case is much more rapid in syphilis without appropriate treatment than in phthisis. 4. Absence of fever in the earlier part of the disease. 5. History of syphilis. 6. Results of antisymphilitic treatment.

The prognosis is good if suitable treatment (mercury and iodide of potassium) be adopted in time. The disease is rare. Prof. Haslund has, however, diagnosticated and successfully treated several cases.—*Hospitals Tidende*, 15, 16/90.

EPIDEMIC JAUNDICE.

Dr. Arthur Henning (Königsberg) believes this disease to be caused by a specific virus. He has observed several outbreaks of it. In one family a healthy little boy of two and a half years

fell sick, with the symptoms of slight gastro-duodenal catarrh. The liver was somewhat enlarged; he was restless and easily tired, and there were signs of some inflammation of the kidneys; jaundice was present. In a few days the general condition got better, but the yellowness of the skin and the pale colour of the faces continued some time longer. Enlargement of the spleen was now noticed. All these phenomena, however, disappeared after several days. Ten days afterwards a little sister, three and a half years old, was attacked by a similar train of symptoms, only in a more severe degree. She suffered from violent delirium and intense headache. Some days later a child, three years old, who lived on the next floor below, was seized with a similar illness; then the brother of the last-mentioned child, five years old, became ill; and finally the parents of the first-mentioned two children—the illness in the mother's case brought on abortion. Details are given of several similar outbreaks of jaundice—*e.g.*, in one family mother, servant, and five children attacked, only the father and one child remaining healthy. A few deaths have been caused by this disease; it is especially dangerous in pregnancy and the puerperal state.

Dr. Henning believes the epidemics he has observed in Königsberg are caused by the bad water of that town. He considers the malady to be a general disease affecting the whole organism, caused by a specific virus akin perhaps to the virus of malaria. The virus multiplies outside the body, and infects one or more persons at the same time, but is not transferred from patient to patient—*i.e.*, the disease is not contagious. It is to be distinguished from simple catarrhal jaundice, and from jaundice from obstruction, which are merely local diseases. For treatment he recommends large doses of calomel and muriatic acid, and irrigation of the large intestine; the diet should contain as little fat as possible.—*Volkmann's Sammlung klinischer Vorträge*, New Series, No. 4.

THE BACTERIOLOGY OF PLEURAL EFFUSIONS.

Dr. E. Levy (Strasburg) has published a most interesting article on this subject. He examined in all 54 cases—37 serous and 17 purulent effusions. He examined 5 serous effusions that had come on in the course of typhoid fever. In 3 of these no bacteria could be detected, while in the remaining 2 that well-known pus-producing organism, *Staphylococcus pyogenes albus*, was found in large numbers. In spite of its presence, however, the exudation did

not become purulent, but remained serous, the cocci gradually lessened in number, and finally the exudation became completely absorbed. One of these cases of typhoid suffered from several severe rigors; during these blood drawn from the finger was found to contain *Staphyl. pyog. alb.* also. In the intervals between the rigors no organisms could be found in the blood. No pyæmic symptoms occurred and the case recovered.

Ten serous and 9 purulent effusions occurring after pneumonia and influenza were examined. Of the serous, 3 contained no bacteria, 2 contained *Staphyl. pyog. alb.*; the remainder of the serous and all the purulent contained only Fränkel's pneumococcus. In these latter cases (empyemas due to the pneumococcus) Levy considers the prognosis is more favourable than in other varieties of empyema. In opposition, however, to those who recommend in these cases mere aspiration, he believes that a free opening gives the best results.

Thirteen serous effusions and one empyema occurred in tuberculous patients. In none of these could any bacteria be discovered. In the case of serous effusions this absence of micro-organisms is not of any diagnostic importance. Many serous effusions contain no germs; but if no micro-organisms can be discovered in an empyema, Levy believes it is probably of tuberculous nature.

In several serous effusions in connection with heart disease, Bright's disease, and cancer no bacteria could be found.

From all his cases he concludes that the majority of sero-fibrinous exudations are free from micro-organisms. *Staphylococcus pyog. alb.* may, however, be present in great numbers without at all influencing the serous character of the effusion or hindering its absorption. These results are important, as up to the present it has been believed that micro-organisms were found only in pleural effusions which were already purulent or which were on the point of becoming purulent.—*Archiv f. experimentelle Pathologie u. Pharmakologie*, Bd. 27, s. 369.

THE PATHOLOGICAL ANATOMY OF FRIEDREICH'S DISEASE.

Block and Marinesco in a case which they examined found the following changes in the spinal cord:—

1. The postero-median column was diseased in its whole extent.
2. The postero-external column in the lumbar region was completely degenerated, except that portion which is situated close to the grey matter of the posterior horn. In the dorsal region the

degeneration extended to every part of the column, but was not so intense. At the junction of the dorsal and cervical cord there was but little evidence of disease.

3. The lateral pyramidal tracts were diseased.

4. The direct cerebellar tract was degenerated from the lower end of the dorsal cord upwards as far as the middle of the medulla. The degeneration was most intense in the upper half of the dorsal cord.

5. The zone of Lissauer was diseased; also,

6. Lockhart Clarke's column.

The other regions of the cord showed nothing abnormal. The whole cord, however, was small. The diseased portions showed the ordinary changes met with in sclerosis.—*Archives de Neurologie*, Vol. XIX., Nr. 57.

THE PATHOGENESIS OF TETANUS.

Dr. Kund Faber (Copenhagen) has obtained from cultures of tetanus bacilli a fluid which, although quite free from bacteria, produced typical tetanus when injected into mice, rabbits, &c. The fluid was obtained by filtration through a chamber and filter. He considers that the virus contained in this fluid belongs to the class of Ferments, and that it is the direct secretion of the living bacteria cells; thus being in its mode of origin analogous to the virus of snake poison, which is directly secreted by the cells of the poison gland.

Faber's experiments lead him to the conclusion that the tetanus bacilli when inoculated into the tissues of an animal flourish only locally in the wound, and are not carried into the blood and distant portions of the body. The virus or ferment, however, is carried by the blood and diffused through the system; thus being the immediate cause of the convulsions. If there is any persistent local irritation in the neighbourhood of the seat of inoculation local spasms may precede the general convulsions. If the irritation be removed, the local spasms may cease, the virus being unable to cause them if unassisted by the irritation. So it is that such proceedings as nerve-stretching, nerve-cutting, &c., are of use in cases of tetanus with local spasms. In cases, however, in which there are general convulsions, a considerable quantity of the poison has already made its way into the system, and local operative measures are useless.—*Berliner klinische Wochenschrift*, 1890, No. 31.

ON THE ACTION AND DOSAGE OF ANTIPYRETICS IN THE DISEASES OF CHILDREN.

Prof. Demme (Bern) considers that a temperature of 101° to 103° F., lasting only for a few days, may best be treated without any antipyretic drugs. The best mode of treatment is by cold compresses renewed every one or two hours. The nervous excitement, restlessness, and sleeplessness, of moderate pyrexia may be relieved by baths at a temperature of 78° – 82° F. Such baths may be given once or twice daily, and the child may remain in them 5–10 minutes.

High temperatures (104° F.), lasting a considerable time, require antipyretic drugs. This is especially the case with regard to typhoid fever, acute rheumatism, and broncho-pneumonia. Prof. Demme generally avoids these remedies in diphtheria, the acute exanthemata, and croupous pneumonia. If the little patient becomes drowsy, especially if his face is very flushed or slightly cyanosed, Demme recommends that he should be put into a luke-warm bath, and that water, at a temperature of about 8° F., below the child's own temperature be poured over his head and neck.

In acute rheumatic fever, Demme gives sodium salicylate; if the child objects to the taste, and has a tendency to vomiting or diarrhœa, he gives salol.

The following are the total daily doses of sodium salicylate:—

For children of 2–4 years, 7–15 grains in 24 hours.

„	5–10	„	15–30	„	„
„	11–15	„	38–46	„	„

The following doses of salol may be given:—

To children of 2–4 years, 4–5 grains 3 or 4 times a day.

„	5–10	„	7–11	„	„
„	11–15	„	11–15	„	„

In typhoid, sulphate of thallin is useful. The doses are:—

For children of 3–4 years, $\frac{1}{6}$ grain every 2 hours.

„	5–10	„	$\frac{1}{3}$	„	„
„	11–15	„	$\frac{1}{2}$ – $\frac{3}{4}$	„	„

In the early stages of broncho-pneumonia, in which the temperature during a long period frequently rises to a considerable height, Demme recommends antipyrin (phenazone). He gives it dissolved in water with the addition of syrup and some drops of

brandy. He gives the drug two or three times at intervals of an hour. The doses recommended are as follows:—

For children of 2 –4 years, 3 –6 grains.

„ 5–10 „ 7–11 „

„ 11–15 „ 12–15 „

In the later stages of broncho-pneumonia, when the fever is of a hectic type, and morning remissions and evening exacerbations are marked, he finds antipyrin of little use, and orders quinine—

For children of 2 –4 years, 3 –6 grains.

„ 5–10 „ 7 „

„ 11–15 „ 11–15 „

Demme has had very good results from the use of antifebrin (acetanilide). In the fever of phthisis it does more good than the other antipyretics. He gives three times daily—

To children of 2 –4 years, $\frac{3}{4}$ –1 grains.

„ 5–11 „ $1\frac{1}{2}$ –3 „

„ 12–15 „ 3 – $4\frac{1}{2}$ „

A cutaneous eruption is more rarely produced by antifebrin than by antipyrin. He has, however, twice observed an eruption like that of measles produced by antifebrin.

Phenacetin reduces the temperature well, but has no effect on the course of the disease. Single large doses have more effect than repeated small ones. He gives (as a single dose, not to be repeated)—

To children of 2 –4 years, $1\frac{1}{2}$ –3 grains.

„ 5–11 „ 3 –7 „

„ 12–15 „ 7 „

He has occasionally observed after its use perspiration, a measly rash, and cyanosis of the cheeks and mucous membranes.—*27 Med. Bericht über die Thatigkeit des Jenner'schen Kinderspitals in Bern.*—*Rev. in therapeutische Monatsheft*, 1891, No. 2.

SUGAR OF MILK AS A DIURETIC.

Germain Sée has found this substance act very well as a diuretic in cases of cardiac dropsy. He gave his patients 100 grams ($3\frac{1}{2}$ oz.) daily, dissolved in 2 litres ($3\frac{1}{2}$ pints) of water, and did not allow them any other liquid. The urine rapidly increased in quantity, until the daily amount in most of his cases was about 8 pints. There were no unpleasant results observed from this treatment. If the kidneys were diseased, diuresis did not occur.—*Bul. de l'Acad. de Méd.*, June, 1890.

Other physicians have also employed sugar of milk, and found it act as a diuretic, although not to the extent that G. Sée writes of.

SPUTUM—EXAMINATION FOR TUBERCLE BACILLI.

Bidert (*Münch. med. Wochenschr.*, 1891, No. 1) recommends the following treatment of sputum in order to facilitate the discovery of bacilli. A tablespoonful of sputum is mixed with two tablespoonfuls of water, and 7–8 drops of a solution of caustic soda added. The mixture is boiled until it becomes fluid; then four tablespoonfuls of water are added, and it is again boiled until the fluid is homogeneous. The fluid is now cooled, and let stand 2–3 days in a conical glass. The tubercle bacilli sink to the bottom, and may be found in large numbers at the bottom of the glass by the ordinary methods of preparation and staining. If the above process does not render the fluid quite thin when it is cooled, 3–6 additional tablespoonfuls of water may be added. Bacilli may be detected by this method in cases in which the ordinary mode of examination gives negative results.

[The above-described method is old, but deserves to be borne in mind in the examination of doubtful cases.]

THE FUNCTIONAL ACTIVITY OF VARIOUS PERIPHERAL GANGLIA.

Dr. W. Hale White has investigated the physiological and pathological value of many peripheral ganglia. He examined microscopically a large number of specimens of each individual ganglion taken from patients of various ages, and who had died of different diseases. If the ganglion cells and other tissues appeared healthy in adults and old people he concluded that the ganglion in question is functionally active in the human adult. If, on the other hand, only atrophied and pigmented nerve cells were found, he concluded that the ganglion might have been functionally active in children, but had degenerated and become useless in adult life. In this manner he concludes that the semi-lunar and superior cervical ganglia are in human adults degenerate and functionless, and that changes in them are of no pathological value; that the thoracic ganglia and those on the posterior roots of the spinal nerves are probably in parts functionally active; and that the Gasserian and cardiac ganglia remain functionally active throughout life, and that changes in them may be of great pathological importance.—*Brain*, 1890, Pt. 3, p. 34.

MODIFICATION OF PHENYLHYDRAZIN TEST FOR SUGAR IN URINE.

The phenylhydrazin test as introduced by Fischer and von Jaksch is not always satisfactory, sometimes giving yellow crystals when sugar is absent, and sometimes failing to show sugar when present. Dr. W. Havelburg (Rio de Janeiro) suggests a modification of this test, which he considers gives reliable results and is easy to carry out. A small quantity—about 20 grains—of hydrochlorate of phenylhydrazin and a rather larger quantity of sodium acetate—about 30 grains—are placed in a test tube. The tube is filled almost half full of water and slightly warmed; an equal volume of urine is added; a little chloroform is lastly added and shaken up with the other fluids. If the test tube be now left to stand, the chloroform soon settles to the bottom, and if sugar is present a layer of fluid forms above it, containing crystals of a canary-yellow colour. The crystals can be removed with a pipette and examined microscopically. They consist of yellow needles, which often are united into groups, radiating from a common centre. If there be a moderate amount of sugar present, the yellow zone is quite visible with the naked eye. The test is delicate, showing sugar in cases where Fehling's test fails.

The reaction takes place even better if the fluid is boiled before the chloroform is added. In this case caution must be taken to cool the test tube before adding the chloroform, otherwise an explosion may ensue.—*Centralblatt f. klin. Medicin*, 1891, No. 5.

ON THE TREATMENT OF ENURESIS IN CHILDREN.

Nocturnal incontinence depends on weakness of the sphincter of the bladder. Whenever even a few drops of urine make their way into the prostatic urethra, the reflex mechanism is set in action, by which the detrusor urinæ is made to contract, and the urine is expelled. The consideration of these circumstances induced Dr. G. P. van Tienhoven to make children affected with this disorder sleep with their pelvis raised, so that the bladder should contain a considerable amount of urine before the fluid exercised any pressure on the orifice. By experiments on dead bodies he came to the conclusion that the bladder of a child three years old ought under these circumstances to contain 600 drops, and that of one ten years old 1,000 drops. He treated 14 children by this method. They were all cured; the average duration of the treatment being 42 days. In only one case a relapse occurred. Of the children, 13 were boys, and one a girl.—*Wiener med. Presse*, 1890, No. 34.

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.R.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF SURGERY.

President—H. G. CROLY, President of the Royal College of Surgeons
in Ireland.

Sectional Secretary—MR. W. THORNLEY STOKER.

Friday, April 10, 1891.

The PRESIDENT in the Chair.

Living Specimens.

The PRESIDENT—(1). Patient whose right lingual artery was ligatured as a preliminary to removal of tongue. (2). Radical cure of direct inguinal hernia.

SIR WM. STOKES—Case of inguinal hernia treated by peritoneal and intercolumnar suture.

Card Specimens.

MR. HAMILTON—Three calculi removed by suprapubic operation.

MR. THOS. MYLES—(1). Parts removed in excision of knee. (2). Parts removed in excision of shoulder. (3). Multilocular ovarian tumour.

MR. P. C. BAXTER—(1). Parts removed in excision of elbow. (2). Foot removed for disease of ankle.

MR. TOBIN—Parts removed in two cases of cancellated osseous tumour of lower jaw.

MR. R. F. SWAN—(1). Parts removed in the operation of Mickulicz. (2). Lower extremity removed subsequent to excision of knee-joint. (3). Parts removed in excision of knee.

MR. AUSTIN MELDON—(1). Three tumours removed from the breasts of three patients. (2). Twelve calculi removed by lateral lithotomy from one patient.

MR. THORNLEY STOKER asked Mr. Swan if he thought that the use of Koch's lymph had precipitated or caused the bad result of the excision of the knee in the specimen he exhibited, and which had resulted in amputation.

MR. WHEELER would like to ask Dr. Swan whether the bones were much engaged, or only to a limited extent, or were only the soft tissues and cartilages affected.

MR. SWAN replied. The case, in short, was this:—Eighteen months ago a girl, aged eleven, came to the Orthopædic Hospital with the ordinary signs of incipient tubercular disease of the knee-joint. An abscess appeared in front. By rest and general treatment she improved, and left hospital with impaired mobility of the knee. She came again three months ago. Koch's lymph was used, with the ordinary reactions. The joint became rapidly swollen, and interference became imperative. He excised the joint, and found acute inflammatory mischief. The joint was filled with sanious pus, and the bones were also infiltrated and of a carmine red. Suppuration became so profuse that, as the patient was rapidly running down, amputation at the middle third of the thigh had to be performed.

Ligature of the Lingual Artery or Arteries as a preliminary to Excision of portion of or the entire Tongue.

The PRESIDENT read a paper, in which he strongly advocated preliminary ligature of the lingual artery in one-sided cancer of the tongue and deligation of both linguals in cases where the disease involved both sides of the tongue. He had tied 15 lingual arteries—viz., six double and three single. The incision in each case commenced beneath and external to the symphysis menti, extending downwards to the great corner of the os hyoides and upwards to a point near the angle of the jaw, avoiding the facial vein. The platysma and deep fascia were divided on a director, and when raised the submaxillary gland is exposed, the digastric muscle, with hypoglossal nerve, forming the boundaries of a triangle in which the artery lies. The fibres of the hyo-glossus now exposed are next divided horizontally on a director, and the artery secured in its second stage. This dissection enables the operator to explore the digastric space, and glands which could not otherwise be felt owing to the dense cervical fascia can be removed, thus making the operation a comparatively bloodless procedure, and giving the patient a much better chance than if the glands were not removed. The President detailed cases in which he removed the tongue as far back as the epiglottis, and where the root of the tongue being severed there was no bleeding. He expressed his

opinion that exploring thoroughly the submaxillary region was just as important in tongue cases as exploring the axilla is in breast cases.

The lingual artery varies—about one in 6 arteries lies on the hyoglossus instead of beneath the muscle; in ligature of both linguals one side often is easier; the artery occasionally pierces the muscle—the artery sometimes large, occasionally very small. The President condemned the Pacquelin cautery as a means of excising the tongue, having seen some secondary hæmorrhage following its use.

MR. HAMILTON said the question which the President has raised is a very wide one, but we must confine our discussion to the actual value of ligature of the lingual artery as an aid to excision of the tongue. To an accomplished anatomist and surgeon ligature of the lingual artery may be a simple proceeding, but to those of ordinary experience it is by no means so easy. If this proceeding is done for the purpose of examining and clearing the submaxillary space, as we deal with the axilla for cancer of the breast, it must be regarded with considerable favour.

SIR WILLIAM STOKES stated that, through the kindness of the President, he had had an opportunity of seeing two of the cases referred to in the communication just read. He could endorse all that had been said by the President as regards the practical bloodlessness of the operation. He was particularly struck with the result obtained in the second case, where the disease in the tongue was very extensive, and where the amount of tissue to be divided very great. Having regard, however, to the considerable number of such cases he had in which he operated by various methods—by the scissors, knife, *écraseur*, and cautery—he felt compelled to question the necessity of ligaturing the lingual artery as a preliminary step in the operation of ablation of the tongue. He never had experienced trouble from secondary hæmorrhage. He thought it was an unnecessary complication. What had been said, however, by the President in reference to the facilities afforded by the incision made for ligature of the artery, for exploring the submaxillary space, with a view to removing any enlarged glands secondarily affected by cancer was important. This exploration, however, could, and in his opinion should, be made in all cases whether the lingual artery be tied or not, as such glandular enlargements may undoubtedly exist in cases of cancer of the tongue without the possibility of their detection by any palpation of the submental tissues.

MR. THORNLEY STOKER said that he did not find hæmorrhage give much trouble in operations for removal of the tongue, and that ligature of the lingual arteries was not therefore necessary as a means of preventing bleeding. But from the point of view that the incision below the jaw allowed a free examination of the submaxillary space, the ready detection of contaminated glands, and their easy removal, he heartily endorsed the view put forward by Mr. Croly. If, he said, Mr. Croly had entitled his paper “On Incision and Exploration of the Submaxillary Space as a

Part of the Operation for Removal of the Tongue for Cancer," instead of "On Ligature of the Lingual Arteries as a Preliminary to Removal of the Tongue," there would be no room for any expression of opinion on the communication save that of unqualified assent.

MR. WHEELER'S experience led him to believe that it was quite unnecessary to ligature the lingual arteries prior to excision of the tongue. He had many operations, both partial and complete, for the removal of the tongue, and he never had any unusual trouble in controlling the hæmorrhage, and only on one occasion did secondary hæmorrhage occur, and that was caused by the cautery being too much heated. On future occasions this never occurred. He agreed with the previous speakers that the compressing forceps will readily control any hæmorrhage that may occur. He was also of opinion that the additional operation might be very prejudicial to the patient. A death from ligature of the lingual arteries as a preliminary to excision of the tongue was recorded here to-night. He could record a case of partial excision of the tongue operated upon four years ago, when there was a gland of irritation, which has subsided. He was assisted in this case by Dr. Stack, Dr. Lyster, Dr. Foot, and others. Dr. Foot examined the case microscopically, and pronounced the specimen removed as epithelioma.

MR. WILLIAM THOMSON said he did not regard ligature of the lingual arteries as at all necessary for the prevention of hæmorrhage in removal of the tongue. The real value of the paper lay in the suggestion of the exploration of the submaxillary space and the removal of all diseased glands. This was in principle the operation of Professor Kocher, of Berne, who, however, went further and removed the tongue at the same time. He (Mr. Thomson) was in favour of the deliberate operation upon the submaxillary space at once, with a view to removal of the glands. Very often in these cases the glands appeared to be safe, while in reality they were already the seat of secondary deposit, and it would therefore be advisable to attack these and eradicate them in all cases.

MR. TOBIN remarked that when removal of the tongue, ligature of the lingual arteries, and clearing out of the sublingual space are decided on, the operation introduced by Kocker, of Berne, accomplishes these objects better than any other, and by removing the disease more completely, gives better results. His experience agreed with that of Mr. Croly as regards the discovery of glands at the time of operation, which had previously escaped notice.

MR. LENTAIGNE considered the President's paper a very valuable one. Nearly all the speakers approved the opening and inspection of the submaxillary space for the purpose of detecting and removing glands, whether affected or not. He agreed with them and would go a little further, and he could not see why, when the submaxillary space was opened up, we should not ligature the artery; it would certainly make

the subsequent operation of removal of the tongue much easier and more thorough, as the fear of hæmorrhage would no longer exist. If the artery were large the operation would be a very easy one; if it were small the fear of hæmorrhage was no idle one. He had seen several cases in the hands of excellent surgeons where very severe hæmorrhage had occurred. He would certainly adopt the procedure recommended by the President on the next occasion.

The PRESIDENT, in replying—1st, to Mr. Hamilton's remarks, said that the difficulty of the operation of tying the lingual should not, in his opinion, be a reason for not performing it. Surgeons should know their anatomy and be prepared for all cases. 2nd. Sir William Stokes said hæmorrhage was always easily controlled in tongue operations; if so, why was tracheotomy, which is so dangerous an operation, introduced as a safeguard against suffocation in tongue operations. Surely the patients did not swallow their tongues. The blood in some cases flowed freely, even when the écraseur was employed. Mr. Wheeler's remark about glands subsiding after removal of the tongue for cancer was not in accordance with the experience of the President, who said he would strongly advise the operator to look on the glands as glands of contamination and remove them. The case mentioned by Mr. Wheeler, when the cancer filled the mouth, and when the glands in the neck were involved, was not a suitable case for operation. The President was glad Mr. Lentaigne was so thoroughly in favour of the method of operating now brought forward. In reply to Mr. Thornley Stoker, the President said one practical fact was better than a thousand theories. The case he exhibited that evening was one of ligature of one lingual for one-sided disease, and the hæmorrhage was completely controlled by the ligature of the right lingual. In conclusion, the President remarked that as most of those who took part in the discussion highly approved the exploration of the digastric space and the removal of the glands, and as the same dissection in reality exposed the lingual artery or arteries, he thought it most desirable to ligature the vessel or vessels, and thus avoid hæmorrhage and give confidence to the operator.

Mickulicz-Vladimiroff Osteoplastic Resection of Foot.

MR. LENTAIGNE read a paper on Mickulicz-Vladimiroff Osteoplastic Resection of Foot.

MR. THORNLEY STOKER expressed his satisfaction at hearing some condemnation or qualification of Syme's amputation expressed. He said that he was conscious that he was giving an unpopular opinion when he stated his want of belief in the general excellence of this procedure. He had found it most unfavourable in his own practice, and seen it to be so in the practice of others; and he was therefore disposed to welcome the new operation of Mickulicz-Vladimiroff.

MR. KENDAL FRANKS said that his experience of Mickulicz' operation was not sufficient to enable him to draw any comparison between it and Syme's operation. He operated on a man aged fifty-six more than three years by this method, and although he had subsequently to place the patient under an anæsthetic in order to flex the toes, the ultimate result was most satisfactory. The patient was able to walk well with only a slight limp, and the legs were the same length. He learnt from this case the importance of flexing the toes thoroughly at the time of operation, and maintaining them in this position during the whole period of convalescence.

MR. TOBIN remarked that Syme's operation had the following advantages over that under consideration:—1st, when a suitable appliance was fitted no deformity was perceptible; 2ndly, there was less liability to the recurrence of the disease in scrofulous cases, *vide* statistics on partial removal of tarsal bones for scrofulous disease; 3rdly, it had stood the test of time.

SIR WILLIAM STOKES took exception to what Mr. Lentaigue had said in reference to the alleged merits of Mickulicz' operation. In the cases he had seen the defects of the procedure were, in his opinion, very great. The patients walked with difficulty and without any confidence. He fully endorsed what Mr. Hamilton and Mr. Tobin had said in favour of Syme's amputation, which he regarded as one of the greatest modern achievements in operative surgery.

MR. SWAN said that in a complete operation he did not think that when sound tissues are applied to sound tissues, a return of tubercular disease was probable.

MR. WHEELER wished to endorse the opinion expressed about Syme's operation. He never saw a bad Syme.

The Section adjourned.

CINCINNATI HOSPITAL.

FROM the report of this hospital for 1889 we learn that 3,654 patients were admitted during this year, of whom 81 were moribund, dying within 12 hours. The mortality of the remaining 3,573 was 7·1 per cent. The distribution of mortality was—medical, 12 per cent.; surgical, 3; obstetrical, 1·4; gynæcological, 7·5; of children, 8·7. 58 cases of enteric fever were treated, with a death-rate of 19 per cent. Nine of the fatal cases were otherwise incurable from various causes, and all were admitted at a late period of the disease. Allowing for these, the mortality from enteric is reduced to 4·7 per cent. One point in the obstetrical report is worth noticing. The average interval between last menstruation and delivery was 27·175 days in primiparæ, and 270·33 in multiparæ.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, June 20, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000^a:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	May 30.	June 6.	June 13.	June 20.		May 30.	June 6.	June 13.	June 20.
Armagh -	25·8	10·3	15·5	12·5	Limerick -	16·2	21·6	21·6	18·2
Belfast -	27·1	23·8	26·2	21·7	Lisburn -	9·7	9·7	19·3	25·5
Cork -	22·7	16·9	20·1	29·8	Londonderry	33·9	10·7	14·3	36·4
Drogheda	12·7	25·4	21·1	22·0	Lurgan -	25·7	10·3	25·7	27·3
Dublin -	18·0	18·9	26·3	23·5	Newry -	24·6	0·0	17·6	7·9
Dundalk -	21·8	30·6	8·7	23·6	Sligo -	19·2	14·4	33·7	20·6
Galway -	6·7	16·8	37·0	37·3	Waterford -	25·5	20·8	16·2	14·4
Kilkenny	0·0	8·5	16·9	18·9	Wexford -	17·1	12·8	8·6	9·0

In the week ending Saturday, May 30, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 28·8), was equal to an average annual death-rate of 30·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·3 per 1,000. In Glasgow the rate was 28·9, and in Edinburgh it was 19·1.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 0·8 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·6 in Waterford—the 11 deaths from all causes registered in that district comprising 2 from whooping-cough.

^a The rates for the weeks ended May 30, June 6, and June 13, respectively, were calculated on the estimated population then in use.

Among the 122 deaths from all causes registered in Belfast are 1 from scarlatina, 3 from whooping-cough, 1 from enteric fever, and 1 from diarrhoea. The 35 deaths in Cork comprise 1 from whooping-cough and 1 from diarrhoea; and the 19 deaths in Londonderry comprise 2 from diarrhoea.

In the Dublin Registration District the registered births amounted to 241—124 boys and 117 girls; and the registered deaths to 127—66 males and 61 females.

The deaths, which are 38 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 18·8 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 18·0 per 1,000. During the first twenty-one weeks of the current year the death-rate averaged 28·0 and was 3·0 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 4 deaths from zymotic diseases were registered, being 15 below the average for the corresponding week of the last ten years, and 4 under the low number for the week ended May 23. They comprise 1 from influenza and 1 from diarrhoea.

Four cases of enteric fever were admitted to hospital, being 1 over the admissions for the preceding week. Six enteric fever patients were discharged, and 15 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

Three cases of measles were admitted to hospital, being 2 below the admissions for the preceding week. One typhus patient was received, but no case of scarlatina was admitted to hospital. Nine cases of measles, 3 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Twenty-three deaths from diseases of the respiratory system were registered, being 19 below the number for the preceding week and 6 under the average for the 21st week of the last ten years. They comprise 13 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, June 6, the mortality in twenty-eight large English towns, including London (in which the rate was 27·0), was equal to an average annual death-rate of 28·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·3 per 1,000. In Glasgow the rate was 27·9, and in Edinburgh it was 24·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 0·7 per 1,000, the rates varying from 0·0

in eleven of the districts to 5·1 in Lurgan—one of the 2 deaths from all causes registered in that district having been caused by diarrhoea. Among the 107 deaths from all causes registered in Belfast are 1 from whooping-cough, 1 from diphtheria, 2 from enteric fever, and 1 from diarrhoea. The 9 deaths in Waterford comprise 1 from whooping-cough and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 174—92 boys and 82 girls; and the registered deaths to 136—65 males and 71 females.

The deaths, which are 26 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·1 in every 1,000 of the estimated population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 18·9 per 1,000. During the first twenty-two weeks of the current year the death-rate averaged 27·7, and was 3·0 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 5 deaths from zymotic diseases were registered, being 1 above the low number for the week ended May 30, but 13 below the average for the 22nd week of the last ten years. They comprise 2 from whooping-cough, 1 from enteric fever, and 1 from erysipelas.

Six cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week. Three enteric fever patients were discharged, and 18 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

Six cases of measles were admitted to hospital against 3 for the preceding week, but no cases of scarlatina or of typhus were received. Twelve cases of measles, 3 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Twenty-one deaths from diseases of the respiratory system were registered, being 2 below the number for the preceding week and 7 under the average for the 22nd week of the last ten years. They comprise 12 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

In the week ending Saturday, June 13, the mortality in twenty-eight large English towns, including London (in which the rate was 23·3), was equal to an average annual death-rate of 23·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·2 per 1,000. In Glasgow the rate was 25·3, and in Edinburgh it was 24·8.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 24·1 per 1,000 of the estimated population, based on the Census of 1881.

The rates of mortality for these towns, calculated on the unrevised population according to the Census of 1891, are as follow:—Armagh, 18·8 per 1,000; Belfast, 24·0; Cork, 21·5; Drogheda, 22·0; Dublin, 25·7; Dundalk, 7·9; Galway, 41·6; Kilkenny, 18·9; Limerick, 22·4; Lisburn, 17·0; Londonderry, 12·6; Lurgan, 22·7; Newry, 19·7; Sligo 36·0; Waterford, 16·8; and Wexford, 9·0. The details for the districts comprised in the city of Dublin, and some required particulars for other towns not being yet available, the rates given in this Return are those calculated on the estimated population as heretofore used.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in nine of the districts to 4·8 in Sligo and Lisburn—the 7 deaths from all causes registered in Sligo comprising 1 from dysentery, and the 4 deaths in Lisburn comprising 1 from whooping-cough. Among the 118 deaths from all causes registered in Belfast are 1 from scarlatina, 2 from whooping-cough, 2 from enteric fever, and 4 from diarrhœa. The 31 deaths in Cork comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 198—97 boys and 101 girls; and the registered deaths to 183—84 males and 99 females.

The deaths, which are 20 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·0 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 26·3 per 1,000. During the first twenty-three weeks of the current year the death-rate averaged 27·7, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Seventeen deaths from zymotic diseases were registered, being 12 over the number for the preceding week, but 2 below the average for the 23rd week of the last ten years. They comprise 3 from whooping-cough, 2 from enteric fever, 4 from diarrhœa, and 1 from hydrophobia. The death from hydrophobia is that of a male labourer, aged twenty-five years, who died on June 12—certified cause of death “hydrophobia, 4 days.”

The number of cases of enteric fever admitted to hospital during the week is 4, being 2 under the number for the preceding week. Four enteric fever patients were discharged, and 18 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Four cases of measles were admitted to hospital, being 2 under the number for the preceding week. The admissions also comprise 6 cases of scarlatina (the only cases since the week ended May 23, when 2 were received) and 1 of typhus. Twelve cases of measles, 9 of scarlatina,

and 4 of typhus remained under treatment in hospital at the close of the week.

Thirty-eight deaths from diseases of the respiratory system were registered, being an increase of 17 as compared with the number for the preceding week, and 8 over the average for the 23rd week of the last ten years. They comprise 15 from bronchitis, 13 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, June 20, the mortality in twenty-eight large English towns, including London (in which the rate was 22·9), was equal to an average annual death-rate of 23·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·2 per 1,000. In Glasgow the rate was 25·2, and in Edinburgh it was only 20·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 23·2 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 9·1 in Lurgan—the 6 deaths from all causes registered in that district comprise 1 from whooping-cough and 1 from diarrhœa. Among the 107 deaths from all causes registered in Belfast are 2 from whooping-cough, and 2 from enteric fever. The 43 deaths in Cork comprise 1 each from typhus, diphtheria, enteric fever, and diarrhœa. The 23 deaths in Londonderry comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 267—148 boys and 119 girls; and the registered deaths to 170—85 males and 85 females.

The deaths, which are 10 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·8 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 23·5 per 1,000. During the first twenty-four weeks of the current year the death-rate averaged 27·5,^a and was 2·6 under the mean rate in the corresponding period of the ten years 1881–1890.

Fourteen deaths from zymotic diseases were registered, being 3 under the number for the preceding week, and 4 below the average for the 24th week of the last ten years. They comprise 1 from typhus, 1 from whooping-cough, 3 from enteric fever, 3 from dysentery, and 2 from diarrhœa.

^a Up to and including the week ending June 13, the death-rates were calculated on the estimate of the population then in use. The rates for the week ending June 20 are based on the population (unrevised) according to the recent Census.

The number of cases of enteric fever admitted to hospital is 10, being 6 over the number for the preceding week, and 28 cases remained under treatment on Saturday, being 10 over the number in hospital at the close of the preceding week.

Five cases of measles were admitted to hospital, being 1 over the number for the preceding week. Five measles patients were discharged. Two cases of scarlatina were received, but no case of typhus was admitted. Twelve cases of measles, 11 of scarlatina, and 4 of typhus remained under treatment in hospital at the close of the week.

Thirty-one deaths from diseases of the respiratory system were registered, being a decrease of 7 as compared with the number for the preceding week, but 5 above the average for the 24th week of the last ten years. They comprise 19 from bronchitis and 6 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of June, 1891.*

Mean Height of Barometer,	-	-	30·014 inches
Maximal Height of Barometer (on 12th, at 9 a.m.),			30·407 „
Minimal Height of Barometer (on 29th, at 9 p.m.)	-		29·457 „
Mean Dry-bulb Temperature,	-	-	58·0°
Mean Wet-bulb Temperature,	-	-	54·9°.
Mean Dew-point Temperature,	-	-	52·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-		·391 inch.
Mean Humidity,	-	-	81·6 per cent.
Highest Temperature in Shade (on 23rd)	-	-	73·8°.
Lowest Temperature in Shade (on 10th),	-	-	43·9°.
Lowest Temperature on Grass (Radiation) (on 10th),			38·6°.
Mean Amount of Cloud,	-	-	58·0 per cent.
Rainfall (on 14 days),	-	-	2·753 inches.
Greatest Daily Rainfall (on 24th),	-	-	·604 inch.
General Directions of Wind,	-	-	N.E., E.

Remarks.

A generally favourable month, of high mean temperature and atmospheric pressure, showing a marked preponderance of north-easterly and easterly winds, in marked contrast to June, 1890, when the prevalent winds were S.W. and W. The rainfall was above the average, while the rainy days were just equal to it.

In Dublin the arithmetical mean temperature (59·0°) was slightly above the average (57·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 58·0°. In the twenty-six years ending with 1890, June was coldest

in 1882 (M. T. = 55.8°), and in 1879 (the "cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°), in 1865 (M. T. = 61.0°), and in 1868 (the "warm year") (M. T. = 60.5°). In 1886 the M. T. was 57.5° , in 1888 it was 56.2° , in 1889 it was 59.5° , and in 1890 it was 58.1° .

The mean height of the barometer was 30.014 inches, or 0.097 inch above the corrected average value for June—namely, 29.917 inches. The mercury rose to 30.407 inches at 9 a.m. of the 12th, and fell to 29.457 inches at 9 p.m. of the 29th. The observed range of atmospherical pressure was, therefore, 0.950 inches—that is, almost an inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 p.m. and 9 p.m. was 58.0° , or 8.5° above the value for May, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*Min.* $\times .465$), the value was 58.6° , or 1.4° above the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865–89, inclusive (57.2°). The arithmetical mean of the maximal and minimal readings was 59.0° , compared with a twenty-five years' average of 57.8° . On the 23rd, the thermometer in the screen rose to 73.8° —wind, N.E.; on the 10th the temperature fell to 43.9° —wind, N.N.E. The minimum on the grass was 38.6° , also on the 10th.

The rainfall amounted to 2.753 inches, distributed over 14 days. The average rainfall for June in the twenty-five years, 1865–89, inclusive, was 1.817 inches, and the average number of rainy days was 13.8. The rainfall was, therefore, much above the average. In 1878 the rainfall in June was very large—5.058 inches on 19 days; in 1879 also 4.046 inches fell on 24 days. On the other hand, in 1889, only .100 of an inch was measured on 6 days; in 1887, the rainfall was only .252 of an inch, distributed over only 5 days; in 1874 only .405 of an inch was measured on 9 days; and in 1868 only .677 of an inch fell on but 6 days. In 1888 the rainfall was as much as 3.045 inches distributed over as many as 18 days. In 1890 it was 1.930 inches on 18 days.

High winds were noted on only 7 days, and attaining the force of a gale on but one occasion—the 30th. Temperature reached or exceeded 70° in the screen on 6 days, as compared with 17 days in 1887, only 1 day in 1888, 10 days in 1889, and only 2 days in 1890. Thunder was heard on the 15th and 24th, and hail fell on the 15th.

In the first week, ending Saturday, the 6th, the weather remained in a very unsettled, dull, and rainy condition. An anticyclone was found throughout over Scandinavia and the Norwegian Sea, while areas of low pressure advanced towards the British Islands from the southward, throwing off troughs of low pressure which from time to time spread eastwards across Germany. Under these circumstances, dry, fine weather and low temperatures ruled over Northern Europe, but heavy rains and thunderstorms were prevalent over the British Islands, France, and

Germany. On Monday morning, the 1st, an easterly breeze and sea-fog caused a remarkable chill in the east of Scotland and north-east of England—at 8 a.m. the thermometer read 46° at Wick and Aberdeen, and only 44° at Shields; at the same hour it read 64° at Holyhead and 67° at Fanö in Denmark—both insular stations. Dublin escaped any electrical disturbances, but the rains were heavy and persistent, and temperature was very low for the time of year. The screened thermometers rose to 62.7° on Wednesday, the 3rd, and fell to 48.2° on Saturday, the 6th—the range of temperature, therefore, was not large. The rainfall was 1.228 inches on five days, .574 inch falling on Wednesday, and .391 inch on Thursday. The prevailing winds were S.E. and E.

Very favourable weather, from both a sanitary and an agricultural point of view, held during the week ended Saturday, the 13th. Between Sunday and Wednesday a depression was travelling slowly in an irregular path northeastwards across France, Belgium, Holland, and Schleswig-Holstein to the Baltic. Heavy rains fell over the Continent in connection with this system of disturbance, but in England it merely caused strong N.E. winds, clouds, and low temperature. Ireland and Scotland were at this time under the influence of an anticyclone, and the weather was chiefly fine and quiet. In Dublin the first two days were rather cloudy and cold, but then came a very fine period, lasting until Friday inclusive, with westerly land breezes or calms and low temperature by night, easterly sea breezes and hot sunshine by day. After Wednesday, England also came under the influence of the high pressure area, which drifted slowly southeastwards. A slight depression on Saturday morning caused a grateful rainfall in parts of Ireland. The week closed with fair promise of summerlike weather. In Dublin the mean height of the barometer was 30.180 inches, pressure rising to 30.407 inches at 9 a.m. of Friday (wind, E.). The corrected mean temperature was 54.3° , or 2.9° below the average. The mean dry bulb reading at 9 a.m. and 9 p.m. was also 54.3° . The screened thermometers rose to 66.9° on Saturday, having fallen to 43.9° on Wednesday. Rain fell in appreciable amount on only one day—Friday (or rather Saturday morning). The total fall was .044 inch.

On the week ended Saturday, the 20th, changeable, cool, and showery at first, the weather became settled and in all respects summerlike after Monday, except in the far North of Scotland, where rain continued to fall daily, though not in large quantities. There were some atmospherical depressions in the North at the beginning of the week, and, in connection with these, sharp thunder and hail showers occurred on Monday in both England and Ireland. An anticyclone then spread northwards from France, finally covering the British Islands. At first the wind was S.W. and temperature rose fast; afterwards calms and easterly winds were experienced, the weather remaining fair and warm owing to the powerful

sunshine by day. In Dublin the mean height of the barometer was 30·213 inches. The mean temperature (corrected) was 61·6°, or no less than 7·3° higher than that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 61·5°. The screened thermometers rose to 72·5° on Thursday, having fallen to 48·4° on Sunday. Rain fell on two days to the amount of ·269 inch. Of this quantity ·171 inch was the result of the thunder and hail showers of Monday. On Tuesday night the minimal temperature was 60·9°. On Friday the thermometer rose to 78° in the shade at Parsonstown.

Two very different types of weather were witnessed during the week ended Saturday, the 27th. Up to and including Tuesday conditions were anticyclonic and the weather was bright and warm. The centre of high pressure was found over Scandinavia, whence a ridge stretched south-westwards to Scotland and Ireland. Meanwhile, a shallow "thunderstorm" depression travelled slowly northwards across France and finally northwestwards to the south of Ireland, bringing with it violent thunderstorms and downpours of rain. In Dublin a heavy thundershower occurred at 5 15 p.m. of Wednesday, followed by a severe thunderstorm half-an-hour later. Next day there were storms of great intensity over the greater part of England, the accompanying rainfall amounting to 2·04 inches at Liverpool and 2·26 inches at Loughborough. On Friday gradients for southerly winds became steep over Ireland, squally and heavy showers being the result. Saturday was also showery, but the wind drew into S.W. and the barometer rose. Intense heat was felt in Sweden and Norway on and after Monday, the 22nd—readings above 80° being recorded at several stations, the highest of all being 88° at Hernösand (Lat. 62½° N.) on Wednesday. In Scotland also the weather remained quite fine until Friday. Some dense fogs occurred on the North Sea, the Irish Sea, and the English Channel coasts during the week. In Dublin, the mean height of the barometer was 29·963 inches. The corrected mean temperature was 61·6°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 61·1°. The screened thermometers rose to 73·8° on Tuesday and fell to 53·1° on Monday. The rainfall was 1·089 inches on four days. Of this quantity ·604 inch fell on Wednesday.

Sunday, the 28th, proved for the most part fine, but a brisk fall of the barometer took place as a depression, which was deep for the time of year, advanced over the kingdom from S.W. On the 29th, heavy showers of rain occurred, and on the 30th the wind blew a moderate gale at times from S.W.

The rainfall in Dublin during the six months ending June 30th has amounted to 8·748 inches on 77 days, compared with 13·413 inches on 94 days during the same period in 1890, 10·576 inches on 97 days in 1889, 12·113 inches on 87 days in 1888, 6·741 inches on 67 days in 1887, and a 25 years' average of 12·313 inches on 95·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in June, 1891, was 2·615 inches, distributed over 11 days. Of this quantity ·880 inch fell on the 15th, ·370 inch on the 24th, and ·350 inch on the 26th. The total fall since January 1 has been 11·955 inches, on 70 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in June was 2·07 inches on 14 days. The total fall since January 1 has been only 6·69 inches on 67 days—the averages of the six previous years for the same six months being 11·13 inches, on 84 days.

PERISCOPE.

SUCCI.

THE *Journal of the American Medical Association* gives the following account of Succi's forty-five day fast in New York:—"On November 15 he commenced a fast of forty-five days, in New York City, completing the same December 20. At the commencement of the fast his weight was 147 $\frac{1}{4}$ lbs., at the end of the forty-five days he had lost 42 $\frac{1}{2}$ lbs., or nearly one pound for each day. At the conclusion, the final medical examination, his condition is reported as follows:—Temperature normal; pulse 62; respiration 90 (?); dynamometer 44; tongue clean, moist and steady; general condition weak; urine eight ounces in twenty-four hours; specific gravity 1·022; reaction acid, clear. Of drinks during the forty-five days he took 291 ounces of Croton [*i.e.*, ordinary] water, 799 ounces of mineral water, and 64 ounces of ice. Of his elixir, which is composed of morphin, cannabis indica, chloroform, sulphuric ether and alcohol, he took during that time 710 drops. His sufferings during the last few days were intense, and when the forty-five days were ended he had reached the limit of his endurance."

STRYCHNIN IN SNAKE-BITE.

DR. A. MUELLER, of Yackandandah, Victoria, claims to have discovered that strychnin, hypodermically injected, is an unfailing antidote to the poison of the Australian thanatophidia. The editor of the *Australasian Medical Gazette* supports him, and allowed him to occupy 4 $\frac{1}{2}$ pages of a recent issue of that journal with a counter blast to a paper read by Dr. T. L. Bancroft, before the Royal Society of Queensland, entitled, "On Strychnine—a Useless Remedy in Snake-bite." Dr. Mueller has the best of it, and does well to be angry. We can even forgive his awful language in accusing his opponent of "piling Ossa upon Helikon in false statements and gratuitous assumptions." Dr. Bancroft's scepticism is founded on some by no means crucial experiments upon the "harmless, necessary" guinea-pig. Dr. Mueller cites cases in which his remedy has,

to all appearance, been successful. The question has no bearing upon the treatment of snake-bite in India, where the venom is, if we may judge from Dr. Mueller's cases, far more virulent and essentially different in its composition and action.

VARIETIES IN HUMAN MILK.

IN the *Archives of Pædiatrics* for November last, Dr. Rotch gives the following table of typical analyses of normal milk from a woman leading a healthy life as to exercise and food, of poor milk (starvation), of over-rich milk (rich feeding, lack of exercise), and bad milk (pregnancy, disease, uncontrolled emotion, &c.):

		Normal	Poor	Over-rich	Bad
Fat	-	4.0	1.50	5.10	0.80
Albuminoids		1 to 2.0	2.40	3.50	4.50
Sugar	-	7.0	4.00	7.50	5.00
Ash	-	0.2	0.09	0.25	0.09
		<hr/>	<hr/>	<hr/>	<hr/>
Total solids		12 to 13	7.99	16.35	10.39
Water	-	88 to 87	92.01	83.65	89.61

When women take too much food and too little exercise there is an excess of albuminoids. This is shown in the accompanying table. The milk was that of a healthy wet-nurse; during Period I. she was poorly fed, during Period II. she had rich food and little exercise for a month, and during Period III. the food and exercise were regulated.

			Period I.	Period II.	Period III.
Fats	-	-	0.72	5.44	5.50
Albuminoids	-	-	2.53	4.61	2.90
Sugar	-	-	6.75	6.25	6.60
Ash	-	-	0.22	0.20	0.14
			<hr/>	<hr/>	<hr/>
Total solids	-	-	10.22	16.50	15.14
Water	-	-	89.78	83.50	84.86

HÆMOPTYSIS IN APPARENTLY HEALTHY PERSONS.

DR. DAVID NEWMAN records (*Glasgow Medical Journal*, Nov., 1890) a very interesting series of cases in which hæmoptysis occurred in apparently healthy persons, and in which he was able to follow out the subsequent history. In three of these cases the blood found its way from above into the smaller bronchial tubes, and was returned by coughing. In each of these cases the source of the hæmorrhage was discovered, appropriately treated, and the hæmoptysis ceased. The fourth case was one of papilloma attached to the posterior pharyngeal wall, and derives great importance from the fact that the first removal of the tumour was followed by cure of the hæmoptysis without any lung symptoms being left,

but that on the tumour recurring the patient one night went to sleep on his left side; next morning coughed up three ounces of fluid blood, complained of stiffness over posterior portion of left upper lobe, had an evening temperature of 103.5° , and died in 20 months, both lungs being found engaged, and tubercular ulceration of the intestine being also present. This case clearly deserves to be classed as *phthisis ab hæmoptoe*. In the last (fifth) case hæmoptysis occasionally occurred over a period of three and a half years, during which time the patient was otherwise healthy, and no physical signs of pulmonary disease could be discovered until within eight months of his decease from *phthisis pulmonis*. After physical signs were discovered no hæmoptysis was observed.

PERSONAL NOMENCLATURE OF DISEASES.

It is time that something should be done to abate the growing nuisance of naming diseases after their discoverers, describers, or inventors. The *Paris Journal de Médecine* has recently printed an alphabetical list of 104 diseases or sub-divisions of diseases—from Addison's down to Winckel's—to which proper names are improperly attached. The correct title is added to each. We observe that Morand is immortalised by association with a foot with eight toes.

ENTERIC FEVER AT FLORENCE.

OUR Florentine contemporary, *Lo Sperimentale*, devotes the original portion of its issue of 28th February to the epidemic of fever—called indifferently “tifo” and “tifoide” by Prof. Banti—which prevailed in Florence at the beginning of this year, and deprived the city of the advantages of a visit from the Queen of England. Sporadic cases occur every year. In 1890, for instance, 25 deaths due to this disease were reported to the Municipal Board of Health in the first four months, 24 in the four following, 37 in September, October, and November. Ten deaths were reported from the 1st to the 14th December, and the fever became epidemic. From this date to the 17th February, 1891, 1,328 cases were reported, with a mortality of 16.56 per cent. The maximum was reached on the 28th December, when 190 cases were reported. It is pretty certain that these figures underrate the severity of the epidemic. The disease was neither spread irregularly through the city, nor concentrated in certain “fever-spots,” but followed a line of streets crossing Florence from N.E. to S.W., while other districts enjoyed immunity or presented only isolated cases until the decline of the epidemic, when some secondary foci of infection were established. The affected zone was attacked simultaneously along its entire course, and received its water supply from a different source from the rest of the city. Florence is supplied with water from wells, from the “galleria filtrante,” and from Monterecci; that from the two latter being under municipal control, and

distributed in metal pipes, a distinct system for each. A line following the distribution of the Montereppi supply coincides with a line traversing the infected zone. Some families residing in the tract supplied from this source used well-water in preference, and were not attacked by the disease. Finally, when by the advice of Dr. Boncinelli, head of the Board of Health, the Montereppi supply was cut off, and that of the "galleria filtrante" substituted (the pipe systems communicating by valves usually kept closed), the epidemic declined.

THE AMERICAN MEDICAL ASSOCIATION.

THE *Journal* of Dec. 27 last gives a list of the members of the Association at that date; they numbered nearly 3,700. A cursory examination of the nomenclature leads to some unexpected results. Thus, there are only 33 Smiths, with one Smyth, and no other attempt to disguise the honoured name. The "Macs" preponderate overwhelmingly, supplying 113 names; the "O's" supply but 10. Welsh names muster strongly. There are 14 Evanses, 29 Joneses, 11 Powells, 19 Williamses. A few other populous names are—Bell, 12; Brown, 15 (besides 1 Browne); Clark and Clarke, 12; Cook and Cooke, 15; Davis, 19; Johnson, with aliases, 20; Martin, 11; Miller, 20; Robinson, 10; Scott, 11; Thompson, 12 (with two Thomsons); Walker, 14.

LAXATIVE POWDER.

DR. DUJARDIN-BEAUMETZ:—Senna pods in powder, 6 grammes; washed sulphur, 6 grammes; fennel seeds, powdered, 3 grammes; aniseed powder, 3 grammes; cream of tartar, 2 grammes; liquorice powder, 8 grammes; sugar, 25 grammes. Mix. A dessert-spoonful in half a glass of water for a dose.—*L'Union Médicale*, No. 129.

CHRONIC INTERSTITIAL HEPATITIS IN A BOY.

DR. H. M. BRIGGS, at a meeting of the New York Pathological Society, on the 20th of April, exhibited a cirrhotic liver, which he had removed from a boy of thirteen years of age.

LOTION FOR CHAPPED NIPPLES.

BALSAM of Peru, 2 grammes; tincture of arnica, 2 grammes; sweet oil of almonds, 30 grammes; lime water, 15 grammes.—Mix. To be applied to the nipple on the removal of the baby from the breast.—*Les Nouveaux Remèdes*, No. 20.

NOMA FOLLOWING TYPHOID.

IN the *Lehigh Valley Medical Magazine* Keim describes a fatal case of gangrene of the cheek following typhoid fever in a boy aged 9 years.—*The Times and Register*, No. 633.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Bovinine.

THIS is a raw food extract, prepared in the laboratory of the J. P. Bush Manufacturing Company, at Chicago, Illinois. It was introduced to the medical profession in America so long ago as 1878, but has only recently attracted much attention in this country. It is a preparation of the juices of lean uncooked beef, obtained by a mechanical process. It is particularly rich in albumen, containing from 17 to 20 per cent. of albuminoids according to various certified analyses, besides the meat salts and extractive matter. The presence of albumen in large quantity may be tested by heat in the ordinary way, and indeed so large a quantity of albumen is present that it is necessary to take bovine cold and diluted with milk or water. It may also be taken mixed with a light wine, ale, or stout; but it should not be given in strong spirit, coffee, tea, or any hot liquid. The full dose varies from a teaspoonful to a tablespoonful every six hours, before or after meals, and on retiring, well diluted. Bovine is suitable for rectal feeding, and is well borne by the stomach in cases of sea-sickness. In cases of extreme weakness or irritability of the digestive organs it is well to begin with 10 to 20 drops diluted with the same quantity of milk or water and repeated every half hour, increasing the dose as the patient can bear it, to four tablespoonfuls per day for an adult. Bottle-fed infants are said to thrive wonderfully well by the addition of 5 to 10 drops at each feeding to their milk. The depôt for Great Britain and Ireland is at 32 Snow-hill, London, E.C.

Caffyn's Malto-Carnis.

The "Liquor Carnis Company, Limited," of 50 Holborn-viaduct, London, E.C., have sent us a sample of a new preparation, to which the name of "Caffyn's Malto-carnis" has been given.

It contains 66 per cent. (two-thirds) of the well-known Caffyn's liquor carnis (uncooked juice of beef) in combination with extract of malt and cocoa, and so forms a nutritious and stimulating food for young children and invalids. It is taken as follows:—Into an ordinary breakfast cup place a dessertspoonful of the malto-carnis, then add gradually, stirring briskly all the while, boiling milk, or equal parts of milk and boiling water, if preferred. Sweeten to taste.

Small Clinical Chart.

We have received from Messrs. H. K. Lewis, 136 Gower-street, London, W.C., samples of a new clinical chart recently published by them. The chief feature of novelty in this chart is its small and therefore handy size. Although it is intended to serve for four weeks' observation, it measures only $6\frac{1}{2}$ by $3\frac{1}{2}$ inches, including the margins, so that it can be carried easily in an ordinary pocket-book or visiting-list.

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OF

MEDICAL SCIENCE.

SEPTEMBER 1, 1891.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*Report on Experiments on the Exact Action of Alcohol.*
By E. MACDOWEL COSGRAVE, M.D., F.R.C.P.I.

THE question as to the exact effect of alcohol in moderate doses is at present attracting a good deal of attention: some consider that although it is narcotic in large doses it is stimulant in small, whilst others consider the apparent stimulus, to quote the words of Dr. Edmunds, “as due to the finer shades of narcosis.” I have collected together reports of some of the experiments which throw light on this point, in the hope that others may be induced to follow up and extend the investigation and so help to set at rest this important point. It will, I think, be observed that, so far, all experiments go to show that the action of alcohol is from the first narcotic rather than stimulant.

Dr. Ridge's Experiments on Alcohol and the Senses.

Dr. Ridge has carried out an important series of experiments^a to determine whether alcohol in small doses is a stimulant or narcotic. The following is an abstract of his results:—

1. *Feeling.*—An instrument was constructed with three points, the outer being half an inch apart and the middle movable by a rack and pinion in a line running between the others. The points were felt and not seen. The test consisted in the person moving the middle point until it was in his judgment equidistant between

^a Medical Temperance Journal, April, 1882.

the others. A dial, concealed from the person experimented on, was divided into degrees. The average results of five experiments are given in the following table:—

	Average No. of degrees from exact centre of dial
Before Alcohol - - - - -	23.
After 3ii. absolute alcohol - - -	37.96

2. *Weight*.—The judgment as to the amount of muscular force required to overcome different resistances formed the subject of this test. A weight was attached to a certain lever, and the person experimented on was required to slide another weight along an exactly similar lever until, in his opinion, the weight appeared to be the same.

Ten experiments were tried, the doses of absolute alcohol ranging from 3ss. to 3iv., the average dose being 3i.85. The general average of error before alcohol was 6.105 mm.; after it, 9.095 mm.

3. *Vision*.—This was tested by noting the distance at which a row of letters could be read by one eye. Ten experiments were tried, and doses of alcohol ranging from 3ss to 3iv. were given, the average dose being 3i.2.3. The general average at which the letters could be read was—before alcohol, 9.375 feet; after alcohol, 8.538 feet.

Experiments Reported by Dr. Lauder Brunton.

Dr. Lauder Brunton thus describes^a the effect of alcohol on the time required for mental processes:—

“The processes generally investigated are—(a) the time required for simple reaction; (b) for discrimination; (c) for selection. The simple reaction is ascertained by marking on a chronograph the time when a signal is made, such as, for example, the exhibition of a coloured flag. As soon as this is seen by the individual experimented upon he marks the time upon the same chronograph by placing a finger upon a key which is connected with the registering electromagnet. The difference between the time of exhibition of the flag and the time registered by the electromagnet is equal to the time required for the transmission of the sensory impulse to the brain, for its transmission from the sensory to the motor tracts of the brain, for its passage down the motor nerves, and the latent period of the muscles.

“The time required for selection is ascertained in the same way,

^a Pharmacology.

but either a red or a blue flag may be shown, and he has to discriminate between them, and only to press when the one previously agreed upon is shown. The difference between the time of this experiment and the former, gives the time required for discrimination.

“The time required for decision is ascertained in the same way as the previous one, excepting that a different signal is to be made on the appearance of the red and of the blue.”

Dr. Brunton's summary is very interesting, as it shows both the physical and mental blunting caused.

“The influence of alcohol upon psychical processes is curious; for, while it renders them much slower, the individual under its influence believes them to be much quicker than usual.”

This peculiar psychical effect was also noticed by Dr. Parkes when making experiments as to work done with and without alcohol. He says of one soldier:—“He commenced the exercise and brandy period with the belief that the brandy would enable him to perform the work more easily, but ended it with the opposite conviction. . . . The brandy seemed to give him a kind of spirit which made him think he could do a great deal of work, but when he came to do it he found he was less capable than he thought.”

Dr. Parkes' and Wollonicz's Experiments on Alcohol and the Heart's Action.

Their first experiment^a was carried out thus:—A healthy soldier, aged twenty-eight, 5 feet 8 inches in height, and weighing 135 pounds, was put upon diet of 2 pints of milk and 28 ounces of oatmeal, and set a daily task of work to do. As soon as he got accustomed to the diet and the work, the observations were commenced. For 26 days his pulse was counted 8 times daily; it was not counted at night, for fear of breaking his rest and so injuring his health. For the first eight days he drank nothing but water; for the next six days he got alcohol in quantities increasing from one to eight ounces. Then for six days he got water, for three days six ounces of brandy, and for the remaining days water.

During the first eight days the average number of heart-beats in the 24 hours was 106,000; during the six days on which alcohol was taken, 120,492.

^a Proceedings of the Royal Society, Nos. 120 and 132.

The following table shows the quantity of alcohol taken, and the number of heart-beats over the average of the water period given on each day. The number 23,372 given as caused by six ounces of alcohol is the mean between the observations of the previous and following day; the number really counted was about 1,200 more, but could not be relied on, as the man was suffering from a slight feverish attack:—

Day of Experiment	Ounces of Alcohol	Heart-beats exceeded Average of Water- period by
9	1	9,240
10	2	6,812
11	4	17,900
12	6	[23,372]
13	8	28,844
14	8	30,420

Dr. Parkes' Experiments on Alcohol and Heart Beats.

Dr. Parkes tried another experiment to determine what effect alcohol would have on the heart beats during alterations of rest and work.

During this experiment no stimulants were given on the first twelve days; afterwards a constant quantity was given—viz., twelve ounces of brandy each day.

The following table gives the average heart-beats per minute during each phase of the experiments:—

Days	Occupation	Drink taken	Average pulse
1-6	Rest	Water	62·2
7-9	Exercise	Water	65·8
10-12	Rest	Water	63·6
13-15	Exercise	12 oz. of brandy	70·35
16-18	Rest	12 oz. of brandy	60·5

In experimenting on another healthy man, Dr. Parkes^a arrived at the following interesting result:—

The exercise and diet being uniform during a period of ten days, the mean daily pulse (nine two-hourly observations) was 70·65. Severe exercise being then taken during another period of ten days for two hours in the morning, in addition to what had been previously taken, the pulse in those two hours was augmented 16 beats per minute over the corresponding period; it fell, however, in the subsequent hours below the mean of the corresponding

^a On the Issue of a Spirit Ration in the Ashantee Campaigns. 1875.

period, so that the mean pulse of the day was 70·42 per minute, the same as in the ten days' period before the additional exercise. The heart, in fact, completely compensated itself, and the work by it was the same as on the days of moderate and of severe exercise.

Dr. Ridge's Experiments on Alcohol and Germination.

Dr. J. J. Ridge, struck with Claude Bernard's experiments as to the action of ether and chloroform upon germination, tried a number of experiments to determine the effects of small quantities of alcohol. The most striking experiment^a was placing a certain number of seeds in a certain amount of soil at the bottom of a number of bottles, then moistening the soil of some with plain water and of the others with dilute solution of alcohol, and corking up the bottles. Even such a weak solution as ·025 per cent. (about one drop in nearly half a pint) had a marked effect, and the effect of ·005 per cent. was perceptible. Growth was either prevented or hindered and depressed, and the production of chlorophyll opposed.

I have tried the same experiment myself and photographed the results, which are very striking.

Dr. Ridge on the Action of Alcohol on Micro-organisms, &c.

Dr. Ridge has also published^b the result of experiments as to the action of alcohol on micro-organisms and cell-protoplasm. The following experiments may be taken as samples:—

He placed under watch-glasses twelve eggs of a blow-fly, all laid at the same time, on blotting paper moistened with water or with water and alcohol in different proportions—namely, 2 per cent., 1 per cent., $\frac{1}{2}$ per cent., $\frac{1}{4}$ per cent., $\frac{1}{8}$ per cent., $\frac{1}{16}$ per cent., $\frac{1}{32}$ per cent.—the last being one drop in about one-third of a pint of water. The experiment resulted as follows:—

Percentage of alcohol	-	2	1	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$	None
No. hatched in 24 hours	-	0	2	1	5	5	7	12	12

He further experimented in a similar way upon *Daphne pulex*, enclosing several of these in bottles under exactly the same conditions, but with different amounts of alcohol. The results were unequal, but sometimes striking. For example, the following table, giving result of Experiment II.:—

^a Medical Temperance Journal, January, 1880.

^b Annual Meeting, British Medical Association. August, 1890.

Percentage of alcohol	1	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$	None
Next day -	- dead	living	living	living	living	living	living
After three days	- dead	dead	dead	dead	dead	living	living
After four days	- dead	dead	dead	dead	dead	dead	living

Action of Alcohol on Medusæ.

Romanes^a and Krukenberg^b have studied the action of alcohol on *Medusæ*. They found alcohol first greatly increases the rapidity of the contractions, so much so that the bell has no time to expand properly between them, and they are in consequence feeble and gradually die out. The reflex stimulation shortly ceases to produce any effect, but muscular irritability is longer maintained.

Dr. Richardson's Experiments on Medusæ.

Dr. B. W. Richardson tried some interesting experiments^c on the fresh-water *Medusæ* found in the Victoria Regia tank at Kew.

"A tube holding 1,000 grains of tank water at 80° F. was charged with one grain of absolute ethylic alcohol. When the diffusion of the alcohol throughout the tube was complete, a medusa was placed in it and observed side by side with another medusa in a tube of tank water. The action of the alcohol was very rapid and very decisive. Within two minutes the movements of the animal, which were counted at 74 in the minute, were entirely stopped, and it was beginning to sink to the bottom of the jar much shrunken in form. At the end of five minutes it lay at the bottom of the tube, a mere pearly speck of matter, while its fellow in the neutral tube was moving about quite unaffected. It was put into plain tank water at 80° F., and was left there for 24 hours, but it showed no sign whatever of resuscitation.

"Another alcoholic solution was made, in which the proportion was 1 grain of alcohol to 2,000 of water. Into this solution another active medusa was placed. It remained for four minutes swimming about lustily, and but little affected. It then began to move with less freedom, and at the end of another minute sank to the floor of the jar, shrunken and motionless. It was taken out at once and placed in tank water at the same temperature (80° F.), but it showed no sign of recovery, and shrank, like the former, into a pearly mass, with soft fluffy margins.

^a Phil. Trans. 1886-7.

^b Vergleichend. physiologische Studien. 1880.

Asclepiad. Oct., 1888.

“A third solution was made, in which the alcohol was in the proportion of 1 part in 4,000 of tank water. A medusa was put into this solution with the same precautions as in the preceding cases. In five minutes the motions commenced to cease, and the animal sank into the lower part of the tube, when it collapsed, lost its transparency, and assumed more slowly, but quite as decidedly, the pearly semi-solid state.

“A fourth observation with alcohol was conducted as follows:—A solution of alcohol was formed in the proportion of 1 part of alcohol in 10,000 parts of the tank water at 80° F. Into this solution a medusa was put in the same way precisely as in the other experiments. The animal was watched for an hour, but without the indication of the slightest change in its motion or condition. To the water a fresh charge of alcohol was now added so as to ensure a proportion of 1 part in 5,000 of water. Again there was no appreciable effect. At the close of two hours more the alcohol was increased to the proportion of 1 part in 2,000 of water. To my surprise the animal remained still unaffected, although the same solution was fatal to other specimens plunged directly into it. After a lapse of over three hours more the strength of the solution was increased to 1 part in the 1,000. Again for a long time there was no effect; but in the course of an hour the movements became slower; they also gradually grew weaker, and by the end of four hours they ceased altogether, the structures undergoing precisely the same fatal change as in the others which had died rapidly in the same strength of solution.

“I have no doubt that the alcohol stops the vital movements of the medusæ by its action on the colloidal matter of which their delicate organism is composed. That it sometimes acts on man in a similar manner, leading to a change of structure in the delicate membranous expanses, is a view which, as is well known, I have long ago expressed, and which this research singularly and unexpectedly confirms.”

Professor Martin's Experiments on Alcohol and the Heart's Action.

Professor Martin^a found that blood containing one-eighth per cent. by volume of absolute alcohol had no immediate effect upon an isolated dog's heart; that blood containing one-fourth per cent. diminished within a minute the work done by heart; and that blood containing one-half per cent. always diminished remarkably

^a Maryland Med. Journal. X 292.

heart-work and sometimes nearly destroyed it, so that not enough blood was pumped out of the left ventricle to supply the coronary artery.

Dr. Hammond's Experiment on the Action of Alcohol on the Nerves.

William A. Hammond, M D., records^a the following interesting experiment showing the direct influence of alcohol on the nerves:—

“I was desirous of knowing how much of each of these conditions was due to the presence of alcohol in the blood circulating through the brain, and how much to disturbance in the quantity of blood normally present in this organ. I therefore arranged a series of experiments by which any increase or diminution of the amount of blood contained in the brain could be exactly determined. I then gave the animal an ounce of alcohol, diluted with an equal quantity of water. In fifty seconds I detected alcohol in the air expired from the lungs.

“In four and a half minutes the respiration was accelerated, the action of the heart became more rapid and strong, and the pupils were beginning to contract. Still there was no increase in the intercranial pressure, and I therefore knew that up to this time the amount of blood in the brain had not been augmented. In six minutes and a half the dog's gait was staggering, and though its movements were uncertain, as if suffering from vertigo, there was no paralysis. The intercranial pressure was still unaltered. The fluid remained stationary in the tube of the instrument for seventeen minutes. Then it began to rise slowly, and with this increase in the intercranial pressure paralysis of the posterior extremities supervened. As the amount of blood contained in the cranium became greater, the paralysis extended, the pupils dilated, and stupor ensued.”

Dr. Prout's Experiments on Alcohol and Carbonic Acid Exhalation.

Nearly 80 years ago Dr. Prout published observations on the effect of alcohol on the exhalation of carbonic acid. He wrote^b:—

“Alcohol and all liquors containing it which I have tried have been found to have the remarkable property of diminishing the quantity much more than anything else that has been made the

^a Philadelphia Times. April 22, 1888.

^b Observations on the Quantity of Carbonic Acid emitted from the Lungs during Respiration, at Different Times and under Different Circumstances. By William Prout, M.D. Annals of Philosophy. Nov., 1813.

subject of experiment. This was so unexpected on my part that I was prepared to meet with the reverse. I was first led, however, to suspect the accuracy of my opinions by observing that when I took porter with my dinner the quantity was always reduced much below the standard, while the reverse was the case when I only took water. This induced me to make some experiments on the subject, and their results were such as fully to persuade me that alcohol, in every state, and in every quantity, uniformly lessens in a greater or less degree the quantity of carbonic acid gas elicited, according to the quantity and circumstances under which it is taken."

The following portion of one of the tabular statements illustrates the general character of Dr. Prout's results:—

Hours of Observation	Observed Quantity of CO ₂ percentage in Respired Air		
12 0 noon	3.90		
12 30 p.m.	3.60	five minutes after taking 3i. of diluted alcohol.	
12 50 p.m.	3.45	„	3ii. „
1 20 p.m.	3.40	„	3ii. more „
2 15 p.m.	3.35		
2 45 p.m.	3.30		

Dr. Andrew Fife,^a M. Vierordt,^b MM. Hervier and St. Layer,^c Dr. Hammond,^d Dr. Smith,^e M. Perrin,^f Dr. B. W. Richardson,^g M. Lehmann,^h and others have also carried out observations on this point.

With the exception of Dr. Smith all these observers found alcohol, even in small doses, lessened the quantity of carbonic acid exhaled.

^a *Dissertatio Chemico-Physiologica Inauguralis de Copia Acidi Carbonici e Pulmonibus inter respirandum evoluti.* Edinburgh. 1814.

^b *On Respiration.* 1845.

^c *Gazette des Hôpitaux.* Feb. 20. 1849.

^d *American Journal of Medical Science.* 1836.

^e *Philosophical Transactions.*

^f *De l'Influence des Boissons Alcooliques prises à Doses modérés sur la Nutrition.* *Recherches Experimentales.* 1864.

^g *Cantor Lectures on Alcohol.* 1875.

^h *Physiological Chemistry.* Pp. 376, et seq.

ART. IX.—*Notes on the Operative Treatment of Uterine Cancer.*^a

By S. R. MASON, M.D. Univ. Dubl.; Fellow and Examiner, Royal College of Surgeons, Ireland; Professor of Midwifery and of Gynæcology in the School of Surgery, Royal College of Surgeons, Ireland; and late Master of the Coombe Lying-in Hospital, Dublin.

NOT many years ago the treatment of uterine cancer was practically nil; a patient found to be suffering from this disease was advised to use deodorising injections, opium to relieve pain, to take tonic medicines, and to support her strength as much as possible, being informed that she was suffering from very serious ulceration of her womb.

Then a period came when all cases were treated by Chian turpentine, which was believed to be a specific, the fallacy of which was soon discovered.

The treatment now has resolved itself into various forms of surgical procedure, all of which aim at the removal of the diseased tissues, and to do this successfully the disease must be recognised at an early period of its existence before any of the structures outside the uterus become involved.

Three different varieties of operations have at different times been practised for the removal of uterine cancer, viz.:—

- I. The application of caustics.
- II. The removal of the diseased tissue by means of the curette.
- III. Removal of uterine tissue, sometimes the cervical portion, at others the entire organ.

The application of caustics to uterine cancer can only be regarded as being palliative in its results, being of use to check hæmorrhage, prevent excessive growth by producing sloughs, and diminish offensive discharges, these results being only temporary. Nitric acid and potassa fusa have probably been most employed.

The curette is used in cases of cancer of the cervix where the disease has advanced too far for a cutting operation, and where it is extending upwards along the mucous membrane of the vagina. Marion Sims has introduced an operation which depends on a combination of these two methods—viz., first removing all cancerous tissue by means of either the curette, scissors, or scalpel, then controlling all hæmorrhage by the application of wadding saturated with solution of persulphate of iron, or carbolic solution

^a Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, November 28, 1890.

and powdered alum; he subsequently takes out a deep slough by applying a solution of chloride of zinc (v. to $\frac{3}{4}$ i. of water) to the wounded surface for five days. This operation is sometimes attended by very good results, controlling the disease for several years. In my opinion, the great objection to it is the impossibility of knowing the amount of sloughing action which will occur. I have seen the bladder opened into by the slough, a fistula resulting which left the patient worse than she had been before operation.

All these methods of operating are, I believe, inferior to the removal of the cervical portion of the uterus in some cases, or of the entire organ in others.

Operation on the vaginal portion of the cervix has been practised either by using the ecraseur or galvanic cautery, or, more recently, by removing the diseased tissue with knife or scissors, cutting through healthy tissue above it.

The ecraseur has one great advantage—viz., if it is worked slowly its use is not followed by hæmorrhage, but it leaves a wound which must heal by granulation, and I think I can remember having heard the late Dr. Denham say that he has known the wire of the ecraseur cut through the posterior fornix of the vagina and wound the peritoneum above.

Of the galvanic cautery I have no experience, and I do not think its use can be better than that of the wire ecraseur.

Removal of the vaginal or supra-vaginal portion of the cervix by knife or scissors is an easy operation, and possesses one great advantage—viz., it is possible to follow up and dissect out the diseased tissue, as much as possible of the healthy mucous membrane being retained to form a flap covering for the stump.

The following case is a fair example of the operation on the vaginal portion of the cervix:—

CASE I.—Mrs. H., aged twenty-three years, admitted to the Coombe Hospital 9th January, 1888; married two years; never pregnant; previous to marriage had been healthy; menses regular, accompanied by pain at the lower part of abdomen, and lasted one week.

For six weeks after marriage did not menstruate; then she had a continuous hæmorrhagic discharge from the vagina for twelve months, which was more profuse during the week corresponding to a menstrual period, the abdominal pains appearing at the same time. Twelve months after marriage she seems to have been treated by the application of caustics to the uterus, which had the effect of controlling the intermenstrual hæmorrhage, except at the time of coitus, which always brought it

on. On examination the lower portion of the cervix was irregularly enlarged about the size of an orange, feeling firm and friable. Uterus normal in position and size.

On 13th January I operated on this case by removing with a strong uterine scissors the entire mass of diseased tissue, covering the surface of the wound with mucous membrane, which was stitched together with silver wire suture.

The patient did very well—there was no rise of either pulse or temperature. The sutures were removed at the end of a week, and the stump was found to be completely healed. I have heard of this woman quite recently, and since being operated on she has been in perfect health.

Removal of the supra-vaginal portion of the cervix is a more difficult and serious operation than removal of the vaginal portion, but is performed on very much the same lines—viz., the uterus having been drawn down, the mucous membrane of the anterior fornix of the vagina is divided, the bladder is separated from the front of the uterus, the mucous membrane is then divided posteriorly, and the uterus separated up as far as is necessary; the lateral connections of the uterus are then divided, any bleeding vessels being ligatured. The scissors are the best instrument for carrying out these steps of the operation. The anterior portion of the uterus above the diseased tissue is then divided, and the mucous membrane of the vaginal wall is stitched to that of the cervix. The posterior portion of the cervix is then removed, and the mucous membrane of the cervical canal and posterior vaginal wall are stitched together, as well as that at the sides of the wound.

CASE II.—A. G., aged twenty-nine years, admitted to the Coombe Hospital 10th July, 1890; married eight years; two full-time children, youngest six years old; menses always regular, lasting seven days, profuse. For three months previous to coming into hospital she lost blood daily from the vagina, and was gradually losing strength. On examination a large mass, about the size of a closed fist, was found growing from the uterus, and filling the vaginal canal; no healthy cervical tissue could be felt. The growth was irregular in shape, friable, and bleeding freely when touched.

On July 15th I operated on this case, exactly as I have just described, using silver wire for sutures. The patient made a rapid recovery, and left hospital twenty days after operation. She is now a ward maid in a large hospital.

Removal of the entire uterus is the operation practised when the disease is in the body, or, though commencing in the cervix,

has extended too far upwards for supra-vaginal amputation to be carried out.

The operation has been performed in two different ways; one, which is known as Freund's method, is to open the abdominal cavity by an incision in the mesial line, then ligature and divide the broad ligaments on each side, then the peritoneum anteriorly and posteriorly, and, lastly, the anterior and posterior fornix of the vagina, thus completing the separation of the uterine connections. The mortality attending this operation has been very great—over 70 per cent.—and for this reason it has fallen into disrepute.

I do not myself know of anyone having performed it in this country. The alternative method of operating is to remove the uterus per vaginam. The steps of this operation are similar to those of the abdominal operation, except that they are performed in reverse order, first dividing and separating the anterior fornix of vagina and bladder, then the posterior fornix and peritoneum of Douglas' pouch, then the utero-vesical fold of peritoneum, and, lastly, ligaturing and dividing the broad ligaments. If it is difficult to apply ligatures, the bleeding vessels in the broad ligaments may be secured by catch forceps, which can be left on until all probability of hæmorrhage occurring has ceased.

On 13th July, 1886, in the Coombe Hospital, I operated on a patient, aged thirty-two years, suffering from cancer of the uterus, in the manner which I have just described, securing most of the vessels in the broad ligaments by catch forceps, and the remainder by ligatures, some of the forceps being removed on the second, others on the fourth day. She made a good recovery, but the cancer recurred, and she died seven months after operation.

Now, in considering the relative merits of these varieties of operation, we should, I believe, consider the cases in which each is suitable, and mortality of each; and, lastly, the remote results as to the recurrence of the disease.

If the disease has commenced in the vaginal portion of the uterus, and the walls of the vagina are not involved, or in the mucous membrane lining the cervical canal, and has not extended too far upwards, either the vaginal or supra-vaginal operation is, I believe, the best, on account of its small mortality.

If the disease is situated in the body of the uterus, or, though commencing in the cervical canal, has extended too far upwards to allow of the supra-vaginal operation being carried out, then, I hold, there is no choice but to remove the entire organ. The

vaginal method of operating, on account of its smaller mortality, should be selected.

As to the recurrence of the disease, the results after operations on the cervical portion of the uterus are most encouraging. One case is reported where a patient went nineteen years after the operation without the disease recurring. In the first case which I described it is now almost three years since the operation, and she remains in good health.

The after results of complete removal of the uterus are not so good as those when portions of the cervix have been removed; why it is so I cannot say, as complete removal of the uterus should get rid of the disease as effectually as partial removal.

ART. X.—*Malignant Endocarditis, with Note of a Case in which Death was caused by Embolism of the Right Coronary Artery.*^a

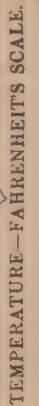
By JOSEPH O'CARROLL, M.D., F.R.C.P.I.; Physician, Richmond, Whitworth, and Hardwicke Hospitals.

IN addressing myself to the subject of malignant endocarditis I shall not presume to do much more than offer some commentary on two cases which have recently come under my notice.

I shall first ask your attention to the clinical and pathological phenomena of a case which has lately been under my care:—

CASE I.—M. B., a single woman, twenty-seven years of age, a woollen weaver, was admitted to the Whitworth Hospital on the 8th September, 1890. She stated that two years ago she had had pains in her knees, and had been laid up for three weeks. Three months before admission she again began to suffer from pains in the arms, legs, and body, unaccompanied by any joint swellings. The menses, previously regular, were absent for four months before admission. She was of slight, but not thin, build, of fair complexion, and anæmic appearance. She was found to have a loud blowing systolic apex murmur, with accentuation of the second sound in the pulmonary area, and the apex beat was displaced slightly downwards and outwards. She complained of pains in her feet, which were very slightly œdematous behind the malleoli. Within a week after admission the pains and œdema disappeared, but it was easily seen from her aspect and temperature that her freedom from discomfort was no measure of her freedom from disease.

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, March 6, 1891.



On Sept. 25th there was noticed over the trunk a small dark-red papular rash, which disappeared in a few days.

Sept. 29th.—An apex presystolic murmur was noticed.

Oct. 14th.—The systolic murmur can be well heard in the aortic area and at the back.

Oct. 26th.—She has had purpura on the right gluteal region and on both legs and feet for the last few days. She tells me that for a month past she has had frequent momentary chills.

Oct. 27th.—The purpuric eruption is on the abdomen to-day. There is tenderness in the epigastric region. The spleen can be felt below the ribs to the extent of two fingers' breadth during inspiration. Liver dulness extends higher than usual by about a rib's breadth.

I may summarise the further history of the case. The patient was kept in bed from her admission till her death on November 18th. Until the last two or three days she had no œdema, but such slight fulness of the lower eyelid as one not uncommonly sees in anæmia. She made no complaint of pain; disliked soups, and preferred to take a little meat. She had no diarrhoea, no sweats, no jaundice, no difficulty in breathing, no cough, and no delirium. She became of a somewhat chlorotic aspect, while her lips gradually assumed a bluish pallor. The temperature throughout was of irregular pyrexial type, and will be seen recorded in the accompanying chart. She died by exhaustion ten weeks after admission and over five months after the onset of her illness. I was never able to get any account of an external wound or internal lesion forerunning this illness; but it is obvious that the channels by which septic infection can enter the body are so numerous that it would be impossible to assert of anyone, no matter how healthy-looking, that he was free from such a danger.

Autopsy, fourteen hours after death.—A well-marked purpuric rash all over the body, thickest on the left side of thorax and abdomen, the side on which the patient had lain constantly for some days preceding death. There was slight anasarca. There was a little fluid in the pleural cavities, and a somewhat more than normal quantity in the pericardium. The lungs were congested, and showed a small area of induration, with one or two caseous spots in each apex. The liver was somewhat enlarged and nutmeggy. The spleen, enlarged and soft, showed a few infarcts. The kidneys contained also a few small infarcts. The stomach showed several spots of submucous hæmorrhage. The heart muscle was œdematous; all the cavities somewhat dilated. The right side endocardium normal. The left auricle has a large patch of soft vegetations on its postero-external wall. This patch is continuous below, with a similar patch on the posterior mitral valve. The anterior mitral valve is thickened, with large, soft, greyish vegetations over all its auricular and the lower half of its ventricular surface; it is apparently

divided in two, almost right up to its base. It has very few chordæ tendineæ attached to it, and these are thickened. Several other chordæ are hanging free from the valve; some are beaded and some are attached to one another.

This case was diagnosticated as one of malignant endocarditis from the period when we found that, notwithstanding the disappearance of all pain, the irregular pyrexia, as seen in the chart, persisted. The changing character of the cardiac murmur strengthened our opinion. The frequent rigors added further confirmation, and the term malignant was amply justified by the issue.

The foregoing case set me thinking how far malignant endocarditis is a morbid entity, how far it is definable by the pathologist, and how far recognisable clinically by the physician.

Taking the clinical question first, I may ask—How is one to know a case of malignant endocarditis? I shall attempt an answer. If a patient with a suppurating wound, a bone necrosis, a pneumonia, a puerperal metritis, an intestinal ulcer, or such like cutaneous or mucous lesion, presents a cardiac murmur, a pyæmic temperature curve, frequent rigors, and disseminated suppurations, and if it can be ascertained that the cardiac lesion has occurred subsequently to the peripheral lesion, and if the murmur shows any tendency to change, whether in position, in time, or in character, then such patient probably has a malignant, or septic endocarditis. But the physician who should wait till a majority of these signs had presented themselves would soon have his doubts as to malignancy set at rest. The question is, how to recognise the disease before it has loomed completely out of the fog. By what lights shall we know the patient's proximity to danger? Most of the characters I have detailed would fit the diagnosis of pyæmia without cardiac lesion, and moreover most cases of malignant endocarditis lack one or many of these characters. Which of them then are the essential ones? I would say the cardiac murmurs and the irregular pyrexia—any of the others may be undiscoverable. Nay, even of these two I venture to suggest that perhaps one may be absent throughout, as we now recognise that it may be for a time—I mean the cardiac murmur. Diagnosis under such circumstances will not be easy, but it may be possible. The peculiar pyrexial curve will probably be the ultimate essential in the diagnosis. Or to make a practical rule:—The occurrence of a pyæmic temperature curve or of occasional pyrexial notches, in the absence of evidence of other causation, ought to hint at the

possibility of the existence of this form of endocarditis, more especially if we know that the patient has previously had any disease which might have induced sclerosis of his heart valves.

But, it may be asked, what is the use of retaining a term like malignant, or any of the other names applied to this form of endocarditis, if the condition is but a part of a systemic pyæmia? In the present state of our knowledge the term is still of use. We are unable to make a natural and scientific classification of the various forms of endocarditis. Let us for the present have a convenient clinical one, and in such this or some similar name will have a place. A multiplication of names does no serious harm. What would be harmful would be that a name such as this should be taken as conveying facts which have as yet to be proved or disproved. For instance, in this very case we have at least two such pitfalls. One is inclined to assume that this form of endocarditis is a pathological unity, which is probably far from being the case, and, what is of far more importance clinically, one thinks of the disease as necessarily fatal, a proposition which assumes that there are no cases of this disease in which early diagnosis and appropriate treatment would just turn the scale in favour of life. If we use the term *malignant* in the sense in which it is applied to small-pox or scarlatina—namely, as compelling a grave prognosis, and with the special limitation that it is the product of septic poisoning, I think the name is still useful.

I submit a heart (No. 2) which bears all the marks of having had an acute proliferative and necrotic endocarditis, such as that which proved fatal in the preceding case; yet the owner of this heart did not die of the endocarditis, but of a single subsequent embolism in a vital part. The brief history I am able to present is this:—

CASE II.—A man between twenty and twenty-five years of age, about 5ft 7in. high, spare but muscular, lodged for a month in a street near the Whitworth Hospital. Of his previous history nothing could be ascertained. During that period he went daily to his work as a labourer, made no complaint of ill health, and was not noticed by his fellow-lodgers to be anything but a fine, healthy young man. One night after he had gone to bed he suddenly complained of being very ill, and he died in a quarter of an hour afterwards.

Post-mortem.—The right heart was found normal. In the left auricle were numerous minute vegetations on the endocardium. In the ventricle

the chordæ tendineæ formed a cauliflower-like mass of cream-coloured oval lumps with calcareous cores, a not uncommon residual phenomenon in malignant endocarditis. The whole mass sprang from the papillary muscles, and was free from the mitral valves. The anterior valve was quite free at its margin. Death was caused by one of the oval lumps getting washed into the circulation and being deposited in the posterior (descending) branch of the right coronary artery.

The specimen is of great interest as a case of coronary embolism, but I venture to adduce it as an example of a previous malignant endocarditis which had got well. I regret, for the sake of the pathological completeness of the specimen, that I removed the embolic plug during the examination of the heart, and ground it up in search for bacilli, and I subsequently removed another of the oval masses from the chordæ in order to make sections. The *sacra fames* of the histologist devours the choicest bits of the best glass-jar preparations.

Malignant endocarditis may affect an endocardium previously healthy, and an endocardium previously diseased, and for this latter it has a special affinity. That is to say, that a valve previously sclerosed by rheumatism is a favourite locus for subsequent septic infection. Almost as a corollary from this, it may be assumed that some cases of cardiac disease, more especially of recurrent disease, are due to septic poisoning, but are not recognised as such because they are not fatal. We tend to forget that in septic poisoning the issue depends not only on the nature of the poison, but on the quantity absorbed.

I contend that we have to recognise that death is not an absolutely necessary consequence of infective endocarditis—possibly not even necessary in the majority of cases in which it really occurs. We want a name badly for the group of cases of endocarditis which are not of diathetic (for instance, rheumatic) causation or due to degeneration. “Septic” or “infective” would be fairly satisfactory both to the pathologist and the clinician if it could be shown that no infective organisms had to do with other forms of endocarditis. “Ulcerative” is objectionable for at least two reasons—one, that ulceration is not by any means constantly present in hearts which have been the subject of this disease; the other, that ulceration, or at least necrosis, may occur in other forms of cardiac disease. I have brought here a heart (No. 3) in which there are two perforations of the aortic valves, but they are the result of atheromatous necrosis, and not of septic infection. The

patient, who was lately under my care, presented no febrile curve whatsoever, although from the rapid development of his symptoms I am forced to think that the valvular lesion was of recent production. Death seemed to be caused by simple failure of the left ventricle.

There is one point, among many, which occurred to me while watching the case of M. B., upon which I find it difficult to formulate an opinion. In such a case how much of the totality of her symptoms is due to a generalised septicæmia and how much to the local endocarditis? Have we, under the influence of the older school of pathologists, attached too much importance to the heart lesion? In a case of pyæmic endocarditis, secondary, let us say, to a pyelitis or renal abscess, we should have little difficulty in deciding that once the patient had a generalised pyæmia the establishment of a cardiac focus differed from one in the deltoid only in proportion to the importance and mechanical necessities of the two muscles; but in a case such as M. B.'s, where the septic process may be said not to have localised itself elsewhere than in the heart valves, the circumstances are different. Of such a case it may be suggested that but for the favourable nidus presented to the poison in an endocardium previously, in all probability, diseased, her tissues generally might have resisted the poison successfully. In such a focus opportunity is given for the multiplication and dissemination of a poison in a degree out of proportion to the resistive powers of the blood and tissues, and, of course, these powers of resistance are themselves lessened by the mechanical impairment of the very mechanism by which the blood and tissues are refreshed and renewed in their struggle against the invading poison.

I have little to say on the pathological aspect of malignant endocarditis. The whole question of micro-organisms in this connection is too large a subject for me to enter upon, especially as I could say very little indeed which was not second-hand. On that part of the subject I beg to refer to Professor Purser's paper in the Transactions of the Academy, Vol. IV., 1886. But with regard to the coarse changes in the heart, one may practically group them into vegetative or proliferative and necrotic or ulcerative. The processes leading up to these changes are not antagonistic but sequential—the one succeeds the other. One of the objects of this paper is to suggest that in favourable cases, practically seldom recognised, the necrotic process may not occur, or may occur only to a slight extent, and thus the patient may be saved all the phenomena of septic dissemination.

I venture then, in conclusion, to accentuate these facts:—First, that malignant endocarditis is a name for a variable group of clinical phenomena, and not, so far as we know at present, for a constant pathological condition; second, that “malignant” as here used does not signify that there is a necessarily fatal form of endocarditis which differs in kind from all forms which are not fatal; third, that many cases of acute endocarditis, those more especially which cannot be traced to the usual diathetic causes, such as rheumatism, are probably the result of septic infection.

ART. XI.—*Complete or Annular Prolapse of the Urethral Mucous Membrane.*^a By WM. S. BAGOT, M.B., L.M.; late Senior Assistant Physician to the Rotunda Hospital; Fellow and Member of the Council, Obstetrical Section of the Royal Academy of Medicine in Ireland; Fellow of the British Gynæcological Society; Member of the Dublin Biological Club.

MY reason for bringing this subject before your notice is not alone because in itself the condition is of great interest, but also that in very many of our English text-books this affection is only lightly touched upon, or is altogether omitted.

A slight degree of prolapse of the urethral mucous membrane is very common indeed; but annular or complete prolapse seems to be a rare condition, for Winckel states, as does Parvin also, that he has but once met with it.

M'Clintock, who, as far as I have read, gives one of the best descriptions of this condition to be met with in any of the British text-books, says that he has never observed a case so extensive as to require operative treatment.

The prolapsed mucous membrane presents itself on the vestibule as a tumour of a bright-red or purple colour, varying in size from that of a cherry to that of a large walnut, and, on examination, the meatus urinarius may be found situated on some portion of its surface, usually about the centre.

The prolapsed membrane becomes extremely sensitive, and bleeds easily on being touched; it gives rise to vesical tenesmus, pain on passing water, or even retention of urine and dyskinesia.

Strangulation and sloughing may take place, thus bringing about a spontaneous cure. According to Hofmeier this affection is most

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, November 28, 1890.

frequently met with in debilitated young women without any appreciable cause; he has also observed two cases which occurred in children, the one aged nine years and the other still younger.

Skene, however, lays considerable stress on previous organic or functional disease of the urinary organs as being predisposing causes, and, further, says that most of the cases in which he observed this condition were weak, nervous patients, aged over fifty years, who had previously suffered from some of these ailments. Old prostitutes, he states, are also predisposed to this affection.

C. Ruge, from the microscopical examination of a portion of the tumour which was removed from a patient under his care, is inclined to believe that this condition partakes rather of the nature of a vascular tumour, consisting of widely-dilated vessels set closely together, than of a true primary prolapse of the urethral mucous membrane. This statement would seem to be supported by the third case, which I will presently describe, where portion of the tumour which was removed presented, on microscopical examination, a condition similar to that described by C. Ruge. As regards treatment, Winckel advises, first, replacement of the prolapsed membrane after removal of the causes, if any, can be found. Rest in bed and the use of astringent injections have also been advised as being of assistance to restore the parts to their normal condition. Should this treatment prove ineffectual, as it usually does, according to Parvin, then excision of the mass should be performed, and the urethral stitched to the external mucous membrane by fine sutures. In performing this operation one should avoid removing too much of the urethral mucous membrane lest a stricture might follow, and precaution should also be taken to prevent the urethral mucous membrane from retracting up into the canal as soon as it is cut, for it is then very difficult, especially in young children, to seize hold of it and draw it down again. Benicke, in one of his cases, returned the projecting mass into the urethra, and fixed it there by means of a catgut suture. Removal by the use of various forms of cautery has also been advised. Dr. Södermark, of Boras, Sweden, considers that the rarity of this affection is somewhat overstated, he himself having met with three cases during a period extending over the same number of years. Two of these were old women, aged respectively fifty-eight and seventy years, while the third was a child, aged nine years. The operation in the first two cases consisted in removal of the growth by the galvano-cautery; but in the case of the child he performed a plastic operation,

removing the prolapsed membrane with a scissors, and uniting the cut edges of the raw surface by sutures. Since my appointment to the Rotunda Hospital three cases of this disease have come under my observation. The first, a woman, aged thirty-three years, came to the Rotunda Hospital out-patient department in April, 1889, stating that there was a swelling at the orifice of her vagina from which a discharge was running, and that for the past week she suffered from intense pain on trying to pass water or walk. She had been delivered of her second child about four weeks and five days previous to this, and there had been nothing abnormal about her labour, but during the puerperium she had suffered from a slight attack of endometritis. On examination, a small dark-red tumour, about the size of a walnut, was found projecting from the vestibule. The central and most prominent portion of the tumour was sloughing, and in the middle of the sloughing mass the external orifice of the urethra was found, through which a sound was easily passed into the bladder. The tumour was simply dusted over with iodoform, and the patient kept in bed. She was discharged in four weeks, the tumour having sloughed off in a day or two after admission, and a spontaneous cure having thus been brought about.

The second case was a child, aged five years, who was brought to me to the Rotunda Hospital out-patient department, as she had been suffering from pain during micturition, and for the past five weeks her under-linen was constantly stained with a sanious discharge. On examination, a tumour of a bright-red colour, about the size of a large cherry, was found projecting from the vestibule and filling up the vulvar orifice. The external meatus of the urethra, situated on the central part of the tumour, was dilated and funnel-shaped, resembling very much the ostium of a Fallopian tube, greatly hypertrophied and swollen. The tumour bled easily on being touched. I operated on this child, removing the growth with a scalpel and stitching the urethral to the external mucous membrane by a few interrupted fine silk sutures. A perfect recovery took place.

Dr. Earl kindly made a microscopical examination of this tumour. Part showed the characters of fibro-myxoma, and part consisted of prolapsed and hypertrophied mucous membrane.

The third case was a child, aged seven years, who had been suffering from hæmaturia for some days. On examination I found a dark-red or purple tumour, about the size of a cherry, projecting

from the vestibule, the urethral orifice being situated a little below the centre of it. It bled freely on being touched, and on inquiry I found the child had from time to time suffered from hæmorrhages, but had not at any time complained of pain. I removed the growth and applied sutures, as in case No. 2. The child made a perfect recovery. On microscopical examination the tumour was found to be of angiomatic structure. In none of these patients was there a history of any previous affection of the urinary organs, nor was there at the time when they came under my notice any constitutional trouble, all seeming to enjoy fairly robust health. The disease appeared to be quite local, for with the removal of the growth all the symptoms disappeared. In the third case pain was not complained of, nor was it, as far as I could learn, a very marked symptom in either of the other two cases till the tumour commenced to become inflamed. The results of the microscopical examination in the last two cases—this unfortunately was omitted in the first—would tend to confirm the opinion that the cases described as “complete prolapse of the urethral mucous membrane” are rarely, if ever, instances of true primary prolapse of this membrane; but that the prolapse of the mucous membrane is secondary to some neoplastic change in it, the most usual being, according to the investigations of C. Ruge and Martin, an angioma.

Literature.—M‘Clintock—Clinical Memoirs on Diseases of Women. 1849. P. 236.

Tavignot—Hernie de la Muqueuse Urethrale (Examineur Médical). 1842. Pp. 75 and 85.

Patron—Du Renversement de la Muqueuse de l’Urethra et de la Muqueuse Vésicale (Arch. Gen. de Méd. 1857. P. 549).

Blum—Des Affections de l’Urethra chez la Femme (Arch. Gen. de Méd. 1877. P. 309).

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Benicke and Ruge—Soc. Obst. and Gyn. of Berlin. 24 Jan., 1890. (Centr. f. Gyn. 1890. P. 165).

Pozzi—Traité de Gynécologie. 1890. P. 1022.

Skene—Diseases of Women. Pp. 866 and 867.

Hofmeier—Manuel de Gynécologie Opératoire trad. par Dr. Lauwers. 1889. P. 85.

Winckel—Die Krankheiten der Harnröhre und Blase. 1885. Pp. 42 and 43.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

An Introduction to the Diseases of Infancy. By J. W. BALLANTYNE, M.D., F.R.C.P.E.; Lecturer on Diseases of Infancy and Childhood, Edinburgh School of Medicine; Lecturer on Midwifery and Gynæcology, Medical College for Women; Physician for Diseases of Children, Cowgate Dispensary, Edinburgh, &c. With coloured and other Illustrations. Edinburgh: Oliver & Boyd. 1891. Pp. 242.

“IN this work the attempt has been made to found upon the sure basis of Anatomy and Physiology a rational conception of the differences which exist between disease as it occurs in the infant and as it is met with in the adult. The anatomical and physiological peculiarities have been stated, and from them deductions have been drawn concerning the hygiene of early life, and the symptomatology of disease in infancy.”

The above extract from the preface very well expresses the scope of this work. The first chapter begins with a pathetic appeal to the medical student to devote more attention than he usually does at present to the subject of infants' and children's diseases. We think this subject might very well have been omitted. It is unnecessary and out of place. If a man buys a half-guinea book on infants, that in itself is a proof that he considers the subject of some importance. Works on other branches of medicine do not generally contain such appeals, and we hope that in subsequent editions the author will trust more to the common sense of those who read his work. The next section treats of the difficulties in the clinical investigation of infantile diseases, and gives rules for avoiding them. We are told what sort of questions the mother should be asked about the child; we are advised to learn the meaning of “the hives” and other similar terms; and we are told that the doctor ought “with a winning smile and in a pleasant gentle voice to begin his conversation with the child.” We think that all this also might have been omitted. If a doctor has a little common sense he does not need such instruction; if he is devoid of that valuable quality, no amount of

instruction will impart it to him; besides, it is not given to every doctor to call up a “winning smile” at will.

The next section of the work relates to the anatomy of infancy in so far as it differs from the anatomy of adults. This subject occupies nearly 100 pages, and is very full and complete. It is largely based on the frozen-section method of investigation. The author has devoted considerable time and attention to this method of studying anatomy; he also quotes largely the results obtained by Symington, Cunningham and other anatomists. There are a good many illustrations—some of them coloured—of the author’s preparations, which elucidate the text in a valuable manner. This part of the work contains more that is new—or, at least, not generally to be found in books on children’s diseases—than the other sections; but it necessarily contains a great deal that is of more importance to an anatomist than a practising medical man. There is, however, a great deal of information that every practitioner ought to be acquainted with. At the end of the description of each region there is an article on the clinical examination of it.

The physiology of infancy is next considered. This subject is treated in a clear and reasonable style, and will well repay perusal. The peculiarities of the various digestive secretions during infancy are fully described. With regard to buccal digestion some interesting experiments of Zweifel are mentioned, which disprove the very commonly held idea that an infant’s saliva is unable to digest starch. He found that even in the first few weeks of life the buccal secretion possesses a distinct though slight diastatic effect, and that an infusion of the parotid gland of a seven-days-old infant converted starch into sugar in a few minutes. It is noteworthy that in this case an infusion of the submaxillary gland had no effect. The amount of ptyalin, however, present in young infants is, as Ballantyne remarks, insufficient for the proper conversion of starchy food into sugar. The varieties of infant-feeding—maternal, mercenary, and artificial—are described at length. The author is in favour of sterilising cows’ milk by boiling it before it is given to the baby. He, however, does not allude to what often proves a serious objection to this valuable method—viz., the tendency it has to cause constipation.

He has but little, if any, belief in teething as a direct cause of various disorders. “A ‘teething cold’ is due in many cases to dentition, but not in the way that is usually supposed. The explanation of the frequency of colds at this time of life is to be

found in the fact that teething is usually accompanied by an excessive secretion of saliva, and that unless this secretion be very carefully wiped away it will trickle on the child's dress and soak it, thus leading almost inevitably to a cold in the chest. A bronchitis having been set up, it is easy now to understand how the inflammatory condition of the bronchi may weaken the general health, and lead to an inflammatory state of the mouth, with all the attendant symptoms of stomatitis, gingivitis, feverishness, restlessness, disturbed sleep, digestive disorder, and the like. In some way such as this it will be found possible to explain the frequent association of various pathological conditions with the process of teething." That may all be very true; but we are by no means certain that the pain and irritation produced by the cutting of the tooth does not in addition produce an effect on the organism, probably through the nervous system. We have often noticed that the dribbling went on for a long time without doing any harm, and it was only just before the tooth appeared—*i.e.*, when the child seemed to be feeling the pain and irritation most—that the bronchitis came on. Irritants of various kinds are admitted as causes of various remote effects in adults: an indigestible meal may produce nettlerash or asthma. Why should the direct irritation of the teeth not be allowed to be as equally efficacious in babies?

The peculiarities of the circulatory, the respiratory, and the urinary systems are discussed; also the temperature and growth of children. The last chapter treats of the nervous system, intellectual processes in infancy, and mental and moral hygiene.

It will be seen that the scope of the book is large. It treats of most important and essential subjects, which are far too often overlooked. One is too often tempted to think of infants as merely little men and women, and to forget that the differences are not only in quantity, but also in kind. We can warmly recommend Dr. Balantyne's work. The printing, binding, and illustrations of frozen sections leave nothing to be desired. Occasionally the author is somewhat long-winded; some passages would be improved by being a little more concise. But these are but slight faults, and we think this "Introduction to the Diseases of Infancy" will be of much use to many practitioners.

We are glad to learn that the subject is to be completed in a second volume entitled "The Diseases Peculiar to the Fœtus and Young Infant," which is in preparation.

On Some Urinary Disorders connected with the Bladder, Prostate, and Urethra. By REGINALD HARRISON, F.R.C.S., &c., &c.
London: Baillière, Tindall & Cox. 1890. 8vo. Pp. 81.

THESE lectures, six in number, were delivered in St. Peter's Hospital last year, and were originally published in the *Medical Press and Circular*, from which they are here reprinted. The first two lectures are devoted to the prevention and early treatment of prostatic obstruction and the operative interference with the more advanced forms, in which Mr. Harrison's well-known views on these subjects are put forward and illustrated by cases. In those cases where tapping of the bladder becomes necessary, Mr. Harrison adopts the simple procedure of pushing a straight trocar and cannula from the perinæum through the enlarged prostate into the bladder. "The point of puncture is one inch in front of the anus, and the direction in a line towards the umbilicus." Thorough drainage is thus effected, and by means of a tube the patient is able to control the evacuation of the bladder, and go about if necessary. The most important point in connection with these cases is the observation that in several of them the "boring" of the prostate has been followed by marked diminution in the size of the gland, as evidenced by rectal examination and by the cessation of the troubles caused by obstruction to the outflow of urine. This is a point deserving of note, on which the observations of other surgeons will prove of the utmost value. In the next lecture Mr. Harrison deals with vesical therapeutics, including some new remedies, and claims for one—the "borocitrate of magnesia"—a capacity for "modifying or altering the crystalline form in which uric acid is discharged, and of exercising a solvent power on some kinds of urate stones." The chapter on hæmaturia contains an interesting analysis of 100 cases in which this symptom was present, and many valuable observations the outcome of a large experience. We can hardly agree with Mr. Harrison as to the "prostatic pile" being a cause of bleeding in cases of enlarged prostate. What the Germans speak of as "bladder-piles"—generally seated at the neck of the viscus—are small varices the result of a long-continued obstruction to the *venous* circulation, and have no relation whatever to the bleeding that so commonly occurs with enlargement of the prostate. There is one point in connection with the diagnosis of malignant growths in the bladder which we do not remember seeing noted before—viz., that the patients "are as a rule more comfort-

able when bleeding moderately than when the urine is absolutely clear"—a point "often verified, either by operation or *post-mortem* examination," which should prove a help in obscure cases. The remaining lectures deal with the early detection and treatment of stone in the bladder, and with the treatment of gleet by antiseptic irrigation, and are full of most suggestive observations. To all surgeons we can recommend the book as the work of one thoroughly imbued with surgical instinct and well-matured experience. There are many misprints—a serious one, "lithotritry" for "lithotomy," in p. 66. The type and general get-up of the book are execrable; nothing but the author's reputation could overcome the unattractiveness of its appearance. We regret to say the style and the English leave much to be desired; perhaps the colloquial style is partly responsible; but should a future edition be called for, Mr. Harrison will not err by bestowing a little polish on his diction and paying a little more attention to the recognised requirements of English prose.

Away with Koch's Lymph! By NICHOLAS SENN, M.D., Ph.D.;
Professor of Practice of Surgery and Clinical Surgery in Rush
Medical College, &c. Chicago: R. R. M'Cabe & Co. 1891.
8vo. Pp. 38.

THIS iconoclastic address was delivered before the Chicago Medical Society on the 18th May last by special request, and in it Dr. Senn gives forth with no uncertain sound the results he has obtained and the opinion he has arrived at after six months' trial of the once vaunted remedy. Dr. Senn's results and conclusions agree with those of all other—except wilfully bigoted—observers, with this difference, that Dr. Senn has the courage of his convictions, and is not afraid to denounce in no half-hearted way the use of this "remedy," which, had it not been for the name that fathered it, would have been refused decent burial long since and relegated to the stake and the cross-roads. The author thus sums up:—"I have given Koch's lymph a fair trial, and have carefully observed its effects, and have become firmly convinced both of the danger which attends its use and its utter inutility in curing any form of tuberculosis. This paper has been written for the special purpose of placing myself on record as one who protests earnestly against further experimentation with this mysterious and dangerous fluid.

A careful study of the voluminous literature on the use of Koch's lymph, and my own experience with it, have induced me to head this paper with the title it bears, 'Away with Koch's Lymph!'

Norris's Nursery Notes, being a Manual of Medical and Surgical Information for the Use of Hospital Nurses and Others. By RACHEL NORRIS. London: Sampson Low, Marston, & Co., Limited. Pp. 184.

THIS is one of the Nursing Record Series of Manuals and Text-books, and contains a large amount of valuable information. There are, however, several points which would be better for correction.

The following paragraphs from the chapter on obstetric nursing will serve as examples:—

"You should take care that she is hardening the nipples during the last month or two with eau-de-Cologne, or some other spirit, and water, thus rendering them much less likely to crack and become sore."

When the head is born the funis, if round the neck, is to be drawn over the head. "If very tight, and you have no help at hand, a finger must be slipped inside and the cord cut, taking care quickly to tie both ends."

When *post-partum* hæmorrhage occurs, "in extreme cases bandaging the extremities has been found efficacious, as it keeps a large amount of blood in the trunk, preventing fainting or syncope, and it is a simple remedy for a nurse to venture upon."

The glossary of eighteen pages ought to be a most useful part of the work, but it is carelessly drawn up and is often misleading. The following examples will illustrate this:—

"*Crepitation*—A grating noise.

"*Dislocation*—To put out of place.

"*Inanition*—Emptiness from absence of food.

"*Jaborandi*—A Brazilian drug.

"*Lac*—Of a milky appearance.

"*Liniment*—An external application for anointing.

"*Neurotomy*—Dissection of the nerves.

"*Omentum*—A fold of fat in front of the intestines.

"*Ren*—The kidney.

"*Trochanter*—The ball upon which the hip-bone turns in its socket.

"*Waterbrash*—A form of indigestion, with a hot sensation in the stomach."

There are also such faults in spelling as *ricus sardonius*, *crust.*, as the physician's contraction for to-morrow; *hypogastrium*.

It is a great pity that a book which contains so much that is useful should be marred by such errors. Before bringing out another edition we would advise the authoress to have the proofs read and corrected by one of the medical men whose help she records in the preface.

On Varicocele: A Practical Treatise. By WILLIAM H. BENNETT, F.R.C.S., Surgeon to St. George's Hospital, &c., &c. With four Tables and a Diagram. London: Longmans, Green & Co. 1891. 8vo. Pp. 105.

THIS "monograph," the author states in the preface, "is offered as a further contribution to the literature of varicose veins," which he has dealt with in a preceding work. It is divided into two parts, of which the first deals with general considerations—the symptoms, causes, frequency of occurrence, relation to sexual conditions, &c.; while the second is devoted to the subject of treatment—mechanical, medical, and operative, and the causes of recurrence after operation. Mr. Bennett devotes much space to the consideration of the condition of the testicle—a point of great interest in connection with the developmental aspect of the varicosity, and comes to the conclusion "that the testicle does not reach its normal development as shown by defective size, consistence, or testicular sensation in rather less than 70 per cent. of all cases of varicocele," and that in a "very small" percentage of these "the testicle is functionally imperfect also." Coming to the question of causation, we are glad to find that Mr. Bennett promptly and effectually discards the time-honoured series of "grinder's tips" which have up to the present retained their authoritative position in our text-books, with one very recent exception. As regards treatment, where the condition renders interference necessary, the author favours, we are glad to find, the open operation. One important modification he introduces—viz., the approximation of the stumps left after the excision of a portion of the venous plexus—but his mode of doing so, by the joining together of the loose ends of the occluding ligatures, is, we venture to think, a most incomplete and unsurgical one. The cut ends should be accurately sewn together with a continuous catgut suture: it adds little to the duration of the operation—after all, a secondary consideration—and it insures

sound and rapid union, on which the success of the operation so much depends. Mr. Bennett, it is true, refers to this alternative method in a note, but we hope that in a future edition the proper place may be assigned to it in the text. Of the "operation of shortening the scrotum by excising a portion of the skin and dartos," Mr. Bennett remarks that "it has now very properly fallen into disuse in this country, but is still to some extent used on the Continent and in America." "The operation," he adds, "is useless in practice and unsound in theory, as it is based upon an entire misapprehension of the functional relation of the scrotum to the testis." Altogether we can cordially recommend the book to all who are interested in the subject. It will well repay study, as it is full of observations of practical import the outcome of well-matured judgment and experience. Added to this, it is published in a style, as regards type and paper, but seldom met with here. This renders reading a pleasure, and not, as is too often the case, a present torture crowned with the terror of future blindness.

A Manual of Practical Electro-Therapeutics. By ARTHUR HARRIS, M.D., and H. NEWMAN LAWRENCE, M.I.E.E. London: Sampson Low, Marston & Co. 1891. Pp. 130.

THIS is by far the best of the Nursing Record Series of Manuals and Text-books which has yet appeared. It is a clearly written introduction to the use of electricity in medicine and surgery, and although not pretending to be a hand-book of electrical treatment, its careful perusal will put the reader in possession of almost all that is required.

Many text-books on electricity in relation to medicine are spoiled by want of clearness and the attempt to be encyclopædic; in the present work these faults are avoided—only the necessary points are dealt with, inviting digression being avoided, and the style is wonderfully clear. Even subjects which generally form stumbling-blocks—*e.g.*, the measurement of currents, volts, ampères, and ohms, and the difference between electro-motor force and current strength—are given so clearly and concisely as to be entirely freed from difficulty. The arrangement of the book is very good, each subject being treated in such order that it is easy to refer to any point even without consulting the good index. There is also a glossary and a number of illustrations, the diagrams

being as clearly drawn as though sketched on a black-board, and the illustrations of treatment being from photographs.

To senior students and medical men who intend using electricity we can confidently recommend the little work.

Rhyming and Mnemonic Key to Materia Medica. By M.D.

London: L. & J. Parnell. Pp. 48.

AFTER a careful perusal of the above, we have come to the conclusion that it would be much easier to learn the Pharmacopœia off by heart than the Rhyming and Mnemonic Key; and that the result would be much better, as even supposing a student mastered the Key, and supposing (and this is a big supposition) he applied his rhymes and mnemonics aright at the examination, by the time he was qualified he would have entirely forgotten the little he knew of materia medica.

For example, "Cleopatra" is meant to remind a man of the preparation of opium, and by taking the letters sometimes singly and sometimes doubled, and still again omitting them, he may associate the two things, but when the freshness of his knowledge wears off and he wants to prescribe opium for the relief of pain, how will he remember which letters to double and which to omit, even if the connection between opium and cleopatra remains in his mind?

We will first give examples of the rhymes the unfortunate reader is expected to remember, not selecting them for special badness, but haphazard:—

"Tinctura Rhei.

"Mem.—Then there's tinct. rhei, with card., cori., and yellow saffron,
Proof spirit being added to dissolve all into one."

The scanning of the above would be good mental exercise for imbeciles; fortunately the author only claims for rhyme, and not for poetry. In the next example, however, it would take an Irishman to rhyme the words we have italicised:—

"Oxide of lead one, and olive oil two parts by *weight*;
Water one part, use a steam bath to *heat*."

One more rhyme must be given, as it contains a mnemonic of local significance:—

"Mistura Olei Ricini. (NEW.)

"Mem.:—

"Mem.—Castor oil, oil of cloves, with syrup and oil lemon,
Liq. pot. with orange flower water, so that you may smell 'em ;

The dose you may give is $\frac{1}{2}$ to 2 fluid ounces—
 This at least is what the B. P. pronounces.
 In repute, in Dublin, for long was this mixture,
 So the Council thought well to make it a fixture;
 The name it has got is Mistura Macnamara—
 After two ounces it's case of *Mister Mack!* no more, ah!"

A couple of examples of mnemonics will probably satisfy the reader's curiosity, but it must be remembered that they are mnemonics, and not enigmas.

Kino being obtained from *Pterocarpus Marsupium*, the student gets this—"Mem.—Turn the cape, mister, there's soup upon it."

The next the author is apparently proud of, as he appends an explanatory note—

"*Aspidium Filix Mass.*

"Mem.—Aspirate a Pompholix Mas."

"(The idea is suggested by this *mem.* of hydatids, which are the larval forms of the Short Tape Worm, the *tænia echinococcus*, the filix mas being of course remedial in Tape Worm.)"

The only useful "tip" we could find was the suggestion of Eserine's myotic action by "Eyes-are-in," and this is inferior to a well-known Dublin "tip" which embraces all substances either dilating or contracting the pupil.

Two good points concerning this publication present themselves to us—

First, it is good for the printing trade, if not for the publishing.

Second, some university has to thank the author for putting M.D. after his name without indicating the source of origin of his degree.

Modern Materia Medica for Pharmacists, Medical Men, and Students.

By H. HELBING, F.C.S. London: 1891. Pp. 115.

THE recent production of synthetical remedies is a remarkable feature in modern chemistry, and it gives chemists an increased right to be heard with respect by the medical profession. Such a work as the present is the natural outcome, all the forty-three preparations dealt with being directly due to the chemist, as distinguished from the naturalist, and all being formed synthetically.

The portion of the book dealing directly with the modern materia medica is really a collection of monographs, in which the method of preparation (with very full reactions), the composition, and the medicinal uses are treated of; the latter are given in

general terms, the object being to show what is the balance of opinion rather than to quote a large number of individual opinions. Under the headings of the forty-three principal bodies are given particulars of the methods of preparation and physical and chemical properties of many more substances, the physiological and therapeutic actions of which are not yet worked out.

Throughout the book there are a number of useful hints—for instance, W. Svetlin's observation that the value of sulphonal as a hypnotic is greatly enhanced by the addition of $\frac{1}{2}$ to 1 grain of codein to each 15 grains of the remedy, and the following elegant form of prescribing exalgin, 4 grains in each tablespoonful:—

R.—Exalgini. grs. xlviii.

Solve in

Tinct. cort. aurant. ℥iss.

Et adde

Syr. cort. aurant. ℥i.

Aquæ ad. ℥vi.

M—ft. mist.

An appendix includes a number of compounds which were either considered of insufficient importance to require detailed description in the body of the work, or which are not purely synthetical remedies. Of these mercury supplies no less than ten, of which perhaps the most widely used is mercuric salicylate, $C_6H_4OCO_2$ Hg.

A table of average doses, another of solubility, and a very good index, complete a book which, for its size, is as useful as any book on the new materia medica could be.

LARGE CURDS IN INFANTS' DIGESTION.

J. B. NIAS, M.B., considers (*Practitioner*, Jan., 1891) "the vomiting of large curds rather as evidence of a long and deficient peristalsis of the stomach, than of simple irritation of the mucous membrane; for peristalsis is essential to the absorption of the products of digestion, and further digestion is impeded by their accumulation, for which reason artificial digestion is most perfectly carried out in a dialyser. Thus an effect may be put down to a quality in the food which should be attributed to the quantity, for an excess in which vomiting is a natural remedy. There cannot be a doubt, I think, that for the production of the very large curds rejected by infants the stomach must be very nearly motionless."

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.R.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF OBSTETRICS.

President—S. R. MASON, M.D., F.R.C.S.I.;

Sectional Secretary—ANDREW J. HORNE, F.R.C.P.I.

Friday, April 24, 1891.

Dr. ATTHILL in the Chair.

Double Pyo-Salpinx.

DR. SMYLY.—Catherine C., aged thirty-five, four abortions and four children. Her present illness dates from last confinement, four years ago. She complained of constant pain of a shooting character in the pelvis and lower iliac regions, and profuse leucorrhœa. Menstruation lasted from 1 to 3 days. Both ovaries and tubes were enlarged and fixed, and that on the right side was prolapsed into Douglas' pouch.

April 3rd.—Abdominal section. Appendages removed on both sides; the tubes were very brittle and broke across when the ligature was tied, and in consequence some pus must have got into the peritoneal cavity, for although it was thoroughly flushed out and drained, she died of acute septicæmia on the fourth day.

In determining what are the risks of salpingo-oophorectomy, the history of the case is of the utmost importance as regards prognosis. Thus, pus resulting from puerperal infection is very much more dangerous than gonorrhœal, and the latter than tubercular. The time since infection is also of importance, the pus losing its virulence with age.

Bridget G., aged from fifty to sixty; married twenty-four years; never was pregnant. About two years ago noticed a swelling of abdomen, which has not apparently increased much since. On palpation a cystic

tumour was found in medial line reaching to within a finger's breadth of the umbilicus. Menstruation stopped for 20 years. Has occasional pain and difficulty in micturition. On examination the uterus was found small and atrophied, and the tumour to be one of the right ovary; otherwise the patient was in good health. Abdominal section was performed on 3rd April, 1891, when it was found that the pedicle had been twice twisted, that there were very numerous adhesions, and that the tumour was practically in a macerated condition. The adhesions were with great difficulty separated, the whole thing being got away piecemeal, and the operation lasting a couple of hours. The patient made an uninterrupted recovery. Temp. on evening of operation, $99\cdot2^{\circ}$.; P. 68. On only two occasions afterwards was the temp. 99° , and on 18th April she was out in the Rotunda Gardens.

Specimens Shown.

DR. R. L. HEARD exhibited a case of partus corpore, conduplicate at term, occurring in a multipara. There had been a prolapse of the funis, and on examination the presenting part appeared to be a breech. Owing to the fixation of the presenting part, the length of time the cord had been prolapsed (4 hours), and the deficient means of antisepsis, the case was left to nature. On emergence from the vulva, the part seemed to be at first sight a female breech, but post-limb, when released, turned out to be an arm, revealing the true state of affairs. The anterior-arm was then freed and body delivered by traction round chest, the neck of child forming a fulcrum against pubes. The head followed immediately after the breech. In utero the head was twisted to left, and flexed on thorax and abdomen. Caput succedaneum on both shoulders. Pelvic measurements normal.

DR. ALFRED SMITH showed an ovarian tumour—large and unilocular—removed from a patient, forty-seven years old, at St. Vincent's Hospital. Three points were of interest—1st. The extreme pain complained of over the fundus of the tumour, which reached to the ribs on either side. 2nd. The extensive fresh adhesions found over the region of pain during operation; they bled profusely; the hæmorrhage was easily controlled by a sponge, wrung out of hot water, pressed against the bleeding spots. 3. The rise of temperature three hours after operation to 100° F.; respirations 40; alæ never working; pulse 120. Next morning temperature fell to subnormal, and continued regular up to to-night, eight days after operation.

On the Treatment of the Stump after Myomectomy and Hysterectomy.

MR. M'ARDLE read a paper on the treatment of the stump after myomectomy and hysterectomy. After referring to a case in which a fatal result attended the extra-peritoneal method, he directed attention to the causes of death after the intra-peritoneal treatment, which, although at

present less successful than its rival, must be looked forward to as the ideal manner of dealing with the pedicle.

In reference to the origin of lethal processes, Mr. M'Ardle held (1) that caustics, astringents, and other applications to the stump acted no small part; (2) that our present methods of securing temporary hæmostasis tended to produce destruction of the vein-walls and surrounding tissue, thus favouring phlebitis, general inflammation of the tissues of the stump, or even necrosis of that structure; (3) that solutions which interfere with the function of the peritoneum are frequently used as flushing material after operation, thus favouring sepsis. Mr. M'Ardle suggested the covering of the stump with omentum as a means of hastening the healing of the wound and shortening the operation.

DR. W. J. SMYLY adhered to the extra-peritoneal method—1st, because statistics showed it to be safer; 2nd, because it was easier in performance and occupied less time. The hope that with the intra-peritoneal method all further trouble with the stump would end had not been verified, and for these reasons Martin, of Berlin, had abandoned the intra-peritoneal treatment of the stump in favour of the total extirpation of the uterus. The resemblance between an ovarian pedicle and the stump of a uterus was more fanciful than real, and, on the contrary, they contrasted in most important points, especially size, vascularity, and especially in the size and condition of their mucous canals.

DR. MORE MADDEN spoke in favour of the intra-peritoneal method in most instances.

MR. O'CALLAGHAN said—An ideal method of treating the pedicle in myomectomy or hysterectomy has not yet been decided upon, and although devoutly to be hoped for, the more cases I see the more improbable it seems, each case presenting a separate difficulty, and it is only while operating that I could decide in what manner I would treat it—that is to say, if when one has finished you have any pedicle to ligature, as we know in many of those terrible deep enucleation cases you find it very difficult to make a pedicle, and must be content with treating it after Martin's method. The method of election, beyond a doubt, when possible, is the intra-peritoneal; but in cases where you have a large fleshy pedicle, it is fraught with great danger, and should never be attempted without means for large drainage. These sloughs of the pedicle of two of my myomectomies will illustrate to you this fact, and the amount of disintegration and suppuration must have gone on before they were thrown off, and had I not used a large drain my patients would probably have died of septic peritonitis. In those cases where you can control hæmorrhage easily and effectively without having to ligature your pedicle *en masse*, as in the first case I showed at the last meeting, that is by simply to take some deep stitches in the deep tissues, to control hæmorrhage, and by inverting the edges of your capsule and sewing it together by an uninterrupted

suture, then placing a drain over your internal wound, you will have the happiest results. My experience has taught me that, excepting the latter method, which you can only use with safety in a small percentage of cases, owing to the difficulty of controlling hæmorrhage effectively. to treat the pedicle, if at all large, by the extra-peritoneal method. However, no rules or theories, no matter how complete or concise they may appear on paper, can be trusted in these cases; and it is only when operating that each surgeon can decide the best method to adopt. In conclusion I would impress strongly upon you the absolute necessity of free drainage in any case you elect the intra-peritoneal method, for without this important precaution the result will be disaster.

DR. BAGOT said that as to Mr. O'Callaghan's remarks that had Mr. M'Ardle used the elastic ligature, or *serre-nœud*, in the case he recorded, the result would have been different. He had seen an exactly similar case where the stump of a myoma had been treated by the extra-peritoneal method with Lawson Tait's *serre-nœud* and pedicle pins, and where, after a sudden effort, about the 10th day the pedicle gave way in an exactly similar way to that described by Mr. M'Ardle. Dr. Bagot thought that the ideal operation of the future was not the intra- or extra-peritoneal method, but the total ablation of the uterus and tumour by either the abdominal or by the mixed method. Dr. Bagot then described the intra-peritoneal method as used by Treub, of Leyden, by which his mortality was only 4 out of 42 cases.

MR. M'ARDLE replied that Dr. Smyly must find gynecological statistics different from those in all other surgical departments if he placed implicit reliance on them. He agreed with Dr. Madden that the pedicles demand treatment differing with their very varied characters. In reference to Mr. Tobin's question as to whether septic peritonitis or septic phlebitis was the cause of death in the greater number of cases, Mr. M'Ardle said that in many of the cases the pelvic veins were solid and surrounded by serous exudation. In reply to Mr. O'Callaghan, he said that the 10th day was not very early, and Mr. Bagot had already shown that the same result occurred in a case treated by the clamp. The total extirpation of the uterus would in many cases, as suggested by Dr. Atthill, be a justifiable and highly to be recommended operation.

Friday, May 29, 1891.

The PRESIDENT in the Chair.

Exhibitions.

DR. WM. J. SMYLY exhibited (1) portion of intestine resected for cure of fæcal fistula, and notified his intention of bringing the case forward in the form of a paper early next Session. (2) He also exhibited three ovarian tumours which he had removed.

DR. MACAN exhibited a ruptured uterus and foetus at term removed from a woman whom he had previously successfully delivered by Cæsarean section.

Ectopic Gestation.

DR. W. J. SMYLY said he had met with six cases of this accident, all of them tubal. He accepted Mr. Tait's view as to the causation of this accident as probably the correct one in the majority of cases. In all the cases the tube ruptured early in pregnancy—five times into the peritoneal cavity, and once into the broad ligament. In the former case, the result depended upon the condition of the peritoneum; if it were healthy, the patient would probably bleed to death unless the hæmorrhage were controlled by surgical interference, but where the intestines are agglutinated together by previous inflammation, the hæmorrhage occurs into a limited space, forming a hæmatocele, and thus arresting the hæmorrhage. The diagnosis of this condition before rupture is by no means impossible, but he had never had the opportunity, and could only confirm Mr. Tait's opinion that in these countries at least medical aid is not sought until after rupture has occurred.

As to treatment, before rupture the enlarged tube should be extirpated, but after quickening he should follow Mr. Tait's advice and wait until the child was viable. Experience, however, alone could decide whether it would not be better to wait until after the death of the foetus.

CASE I.—The patient, who for a time had been fruitful, acquired sterility in consequence of an inflammatory attack following child-birth, and having continued in this condition for seven years, became the subject of an extra-uterine gestation. This pregnancy evidently commenced in the right Fallopian tube, which burst about the third month, and after the ovum escaped into the subperitoneal connective tissue, it continued to develop between the layers of the broad ligament up to the sixth month, when it died, and spurious labour occurred. After this all foetal movement ceased, the breasts became flaccid, and the skin jaundiced; the latter was probably due to urobilin resulting from absorption of effused blood, and should have been a help towards a diagnosis. In October, 1890, two years after the death of the foetus, she was taken into the Rotunda Hospital, and the tumour removed by abdominal section. The tumour (exhibited), was about the size of a large cocoa-nut, and one hand of the foetus could be seen protruding upon the surface.

CASE II.—This patient, a prostitute, who had syphilis, was twenty-four years of age. She complained of pain in the hypogastrium with a red discharge. She was septic on admission with a large abdominal tumour supposed to be the pregnant uterus—it proved to be a putrid hæmatocele. Right tube which had ruptured was secured, and abdomen washed out. Patient died same evening.

CASE III.—Patient admitted to hospital with retro-uterine hæmatocele. Expectant treatment, followed after three weeks by putrefaction of the contents of cyst. Free evacuation per vaginam of putrid blood and fœtus. Attempt to remove placenta, followed by alarming hæmorrhage. Cavity washed out and drained. Death of patient from putrid absorption.

The important question is, should extra-peritoneal hæmatocèles be interfered with surgically? Out of these five cases one was hopelessly septic when admitted, one became so after three weeks, but three recovered without a drawback.

Ovarian Tumour.

DR. LANE exhibited an ovarian tumour removed four days previously. Patient, a young woman, married eight months previous to operation. Sent by a physician who had been consulted for supposed indigestion, and considered the tumour was an enlarged uterus due to pregnancy. Patient did not notice there was any enlargement of abdomen, although tumour was only a finger's breadth from ribs. Tumour had to be enucleated, as it was covered to a considerable extent by peritoneum. Patient has up to the present made a good recovery.

Cysts in the Labia Minora.

DR. BAGOT showed photographs and microscopical preparations taken from cysts occurring in the labia minora and vestibule. He stated that the occurrence of cysts of any size in these situations was so rare that they were of great interest. The case was as follows:—M. W., aged twenty-three years, unmarried, was sent to him as she had been suffering from a tumour about the size of a small hen-egg, which projected from the vulva and caused her great inconvenience while walking or on trying to sit down quickly. The tumour involved both labia minora and the under surface of the clitoris. Its outer surface was smooth, with the exception of a projection on the inferior aspect caused by a small secondary cyst which sprang from that part. The urethra was quite free and the vaginal orifice normal. The hymen was intact. Dr. Bagot enucleated the tumour and closed the cut surface with a continuous cat-gut suture.

The tumour consisted of a large cyst, in the wall of which were several smaller cysts. All the cavities contained the same yellowish creamy material, consisting of cholesterine crystals, *debris* globules of granular matter and fat globules. The walls were thin and lined on their internal surface by a glistening smooth mucous membrane.

On making a microscopical examination these walls were found to consist of fibrous connective tissue, covered on the internal aspect by a stratified epithelium, and on the external surface by the ordinary stratified pavement epithelium covering the parts.

Porro's Operation.

DR. BAGOT showed a uterus removed by Porro's operation from a woman for severe accidental hæmorrhage occurring about the eighth month of pregnancy. Dr. Bagot was called by one of the pupils of the hospital to see a patient living in a tenement house close to the hospital. On his arrival he found that she was almost collapsed, having had severe accidental hæmorrhage, at first concealed. The pulse was 148, very small and compressible. Her lips were quite blanched and her pupils dilated. There was extreme jactitation and sighing respiration. The uterus was larger than the term of pregnancy, though the membranes had been ruptured before his arrival in order to check the bleeding. The child was in the first position vortex ; no foetal heart could be heard.

The os, which was rigid and undilatable, admitted a finger easily. On pressing up the head the blood flowed freely out of the uterus. Labour had not set in, though she had all night suffered from severe distension pains in the uterus. Believing that owing to her collapsed state it would be impossible to deliver her alive by perforation followed either by version or extraction, or extraction with the cranoclast, he at once performed Porro's operation, treating the pedicle extra-peritoneally by means of Tait's serre-nœud and pedicle pins made out of two Peaslee's perinæum needles, as he had not time to procure proper pedicle pins. The placenta was found at the operation to be completely detached, and the uterus was full of clots—the child, of course, was dead. Since then she has made a good recovery, being moved into the Rotunda Hospital on the fourth day after the operation. The serre-nœud being almost separated on the eighteenth day, he detached it completely with a scissors, clipping the remaining portion of the pedicle through. It was three weeks since the operation, and she appeared perfectly well. The hole where the pedicle had been looked perfectly healthy, but had yet to granulate up. It was, he believed, the first successful Porro's operation in this country.

SECTION OF STATE MEDICINE.

President—A. W. FOOT, M.D., F.R.C.P.I.

Sectional Secretary—E. MACDOWEL COSGRAVE, M.D., F.R.C.P.I.

Friday, May 1st, 1891.

T. W. GRIMSHAW, M.D., Registrar-General for Ireland, in the Chair.

On the Fifth Year of Medical Education.

DR. FALKINER read a paper on the Fifth Year of Medical Education. The author, referring to the resolutions of the Medical Council of 1889-90, pointed out that, in order to be qualified for holding a Poor-law

appointment, six, and not five, years of study were required. In defence of the short period of study at present in vogue, Dr. Falkiner referred to the abuse of hospital and other charities, and also the state of degradation that some of the English general practitioners have fallen into. He urged that the expense of medical education was fully equivalent to the value received by the student, and objected to any increased outlay. He advocated the method adopted by the Conjoint Board of England, who in the minor subjects make the examination and not the certificate of the teacher the standard of their degrees, and finally spoke strongly of the pupils' residence in a general hospital with an out-patient department as the true foundation of the medical student's training.

DR. DONNELLY said—The part of Dr. Falkiner's paper on which I feel most qualified to speak is that which deals with the recommendation that the fifth year be spent as a resident student or apprentice to a practitioner holding a public appointment. Being connected with the Whitworth and Hardwicke Hospitals, and also holding a dispensary appointment, I have special opportunities of seeing the wants of medical students. Some students who attended the poor-law dispensary to learn vaccination have accompanied me on my visits to the patients' homes, and I have been told that more genuine knowledge of the practice of medicine has been acquired than would have been attained at hospital in the same time. The ward of a hospital where cases of disease are, so to speak, found cut and dry, is the most attractive field for junior students; but, after a time, the student ceases to take any interest in the more common ailments. It is very different when a senior student or junior practitioner attends the practice of a poor-law dispensary. He sees the case in its entirety, as he will be called upon to treat it in after-life with all the social surroundings, &c., and hence will be better qualified to earn his bread and save his patient's life.

DR. NEWELL said, with regard to the difficulty of obtaining residents for hospital, that he considered, judging from the experience of having resided for several years in a Dublin hospital, that this is due to the student's ignorance of the real value of these appointments. This fact has been proved by the anxiety of surgical residents, which he had invariably observed, to obtain a medical residency, and *vice versa*.

DR. R. MONTGOMERY said—After over 25 years as an Examiner in the Apothecaries' Hall, I find that general answering has deteriorated. I think that attendance under dispensary officers would be most advantageous. Students after leaving hospitals are unable to give that knowledge to minor ailments in the way of prescribing so essential. Pharmacy is the deficiency. Few men now are able to write prescriptions after the manner of Hudson and other learned Presidents. I think the additional year is advantageous, as it will lessen the number of men going to the

profession, and, perhaps, lessen the disgraceful practice that is carried on in England of 6d. and 1s. dispensaries.

DR. J. W. MOORE noticed that Dr. Falkiner considered the fifth year proposed by the General Medical Council to be in reality a sixth year, since a Diploma in State Medicine, with a year's curriculum, would in future be required in addition to the proposed five years' curriculum. But, in his opinion, the suggested reform by the General Medical Council would really reduce the curriculum to three years, the first year of medical study being practically spent in non-medical schools and non-medical courses, while the proposed fifth year would be practically spent by the candidate as "an unqualified assistant," that anomalous individual upon whom had descended the heaviest wrath of the General Medical Council in recent years. The speaker was strongly in favour of a prolonged period of genuine medical study, such as existed in Sweden and Norway; but he considered that a fifth year should be spent either in the wards of a clinical hospital or in a first-rate Continental school, such as that of Vienna, Berlin, or Paris.

DR. R. K. JOHNSTON thought the want of knowledge in the diagnosis and treatment of simple ailments on the part of senior students and junior practitioners arose through the students being anxious to see rare diseases, and this was due to the fact that the examiners expected them to have an accurate theoretical knowledge of rare diseases. In surgery the student is taught, for instance, the different methods of ligaturing arteries, operations on the foot, and amputations through the hip joint; but when will the ordinary practitioner be called on to ligature a large artery? Hospital physicians seldom lecture on the so-called simple ailments. Who, as a student, has ever heard a clinical lecture on biliousness?

MR. TOBIN said that two questions were raised by Dr. Falkiner's paper. 1st. As to the advisableness of a fifth year of study. 2nd. As to its disposal. If, as Dr. Falkiner said, the profession was being over-crowded by men who in their struggles to exist undersold one another, then limit the number by raising the standard of qualification. As to the disposal of the fifth year, it should be given chiefly to clinical study. At present it was an undeniable fact that it was not possible for a student to attend hospital properly and pass his examination without missing a session.

DR. DOYLE, SURGEON-MAJOR MACNAMARA, and DR. SAVAGE also spoke.

The CHAIRMAN remarked on the importance of the question which Dr. Falkiner had brought under the notice of the Section, and the very interesting and varied opinions which had been elicited by the discussion. He said he claimed to have some special knowledge of the various questions connected with medical education and examinations, having been a private teacher, a lecturer for several years, and the occupier of three separate chairs, a clinical physician and examiner. He also announced

that he was the drafter of the Conjoint Scheme of Examination for Ireland which had been adopted with comparatively slight modification by the colleges. With this scheme he disclaimed any effort on the part of those who drew up schemes for education and examination to have drafted these schemes with the special view to the benefit of professors and examiners, and he expressed surprise at those speakers who had taken such a view of the question. He admitted there were some selfish persons who would act in this manner if they had the power; but this power was denied to them. With respect to the great pressure on the students' time now complained of, he stated he used to go to hospital at 8 o'clock, attend medical and arts lectures all day, and often dissection in the evening, and many of his fellow-students did the same. He was afraid students were not as industrious now as they were thirty years ago, or there would not be those complaints. With respect to the list of examinations and number of courses, he stated that practically these were the same as formerly, as some of the compulsory courses had been struck out and others inserted. The cost of medical education was, he believed, much less than it was fifty or sixty years ago, when it was common to pay £600 or £700 apprentice fees, and other expenses beside. He mentioned the case of a friend whose father paid over £2,000 for three sons as apprentices when money was of much more value than at present. The main feature of Dr. Falkiner's paper was the best method of regulating study during the fifth year, which it was decided on all hands should be devoted to practical clinical work. Dr. Falkiner advocated attendance at a poor-law dispensary as a suitable way of obtaining instruction in practical medicine and surgery, and pointed out how the class of diseases treated at dispensaries could not be properly studied in clinical hospitals. He (the Chairman) quite agreed that such institutions would be useful and desirable, and are at present difficult to obtain; but when it is remembered that there are some three-fourths of the members of the profession engaged in general practice, and that of these a great number hold public or *quasi*-public appointments, and that many of them were quite unfit to act as teachers, he could not see that, under the present circumstances, it was desirable to accept certificates of study from such a large class as must necessarily be included. We are sure of the instruction given at clinical hospitals, but could not be sure of what might be given at the dispensaries. The Chairman thought, while the instruction at dispensaries should be encouraged as an additional acquirement, it should not be admitted in substitution for any portion of hospital clinical instruction. As to the suggestion that general pharmacy was not sufficiently studied, he was of opinion that it got quite enough of attention; it was no more the business of the medical practitioner to make tinctures and extracts than to make splints and to sharpen instruments. While it was desirable he should be handy and able to do the latter in an

emergency, it was also desirable he should know how to do the former ; but it was not his business. Pharmacy, as instrument making, was a trade attached to the practice of medicine. In conclusion, he sympathised with Dr. Falkiner's proposals ; but was unable to see how they could be carried out.

DR. FALKINER, in reply, held, in answer to the Chairman's objection to practitioners becoming teachers, that only these men who could teach would get pupils, as in the case of grinders and hospital teachers, and also differed from him as to the benefit of a knowledge of practical pharmacy to the practitioner, which Dr. Falkiner considered of extreme importance and value.

Model of a Water-closet.

MR. TOBIN exhibited a model of a water-closet, invented and patented by Surgeon-Major W. H. Macnamara. In this closet the pan, soil-pipe, and attachments are left outside the house, merely covered sufficiently to prevent unsightliness, and are completely cut off from the interior of the closet, so that gases escaping from the pan or at defective joints would escape into the open air. When the closet is about to be used a box carrying a comfortable seat is swung outwards over the pan. After use the box is drawn inwards, which action flushes the closet, leaves the pan, &c., outside, and cuts it off from the interior, as the back of the box closes the aperture through which it swings. Two of these closets are at present in use, one at Guinness's Brewery, St. James's-street, and the other at Arbour-hill Station Hospital. The mechanism is extremely simple, and the closet perfectly comfortable. The apparatus is placed in the back wall of the closet, in a somewhat similar manner to an ordinary fireplace, the pan occupies a position similar to the grate, and what would be the inward opening of a fireplace is closed by the swinging-box and its frame. What would be the back of the fireplace is open altogether, or merely covered by a louvre to prevent unsightliness.

DR. COSGRAVE asked whether the cistern and water in the pan would be safe from frost. He also pointed out how excellent the closet would be in towns where the pail system was in use, access being easily got to the pail by the sanitary authorities from outside without disturbing the inmates of the house.

DR. R. MONTGOMERY, DR. DONNELLY, and the CHAIRMAN also spoke favourably of the sanitary merits of the invention, and SURGEON-MAJOR MACNAMARA replied to a number of questions asked by those present.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—E. H. BENNETT, M.D.

Sectional Secretary—J. B. STORY, F.R.C.S.I.

Friday, May 8, 1891.

The PRESIDENT in the Chair.

Osteosarcoma of Jaw.

DR. E. H. BENNETT exhibited a tumour of the lower jaw, which he had removed from a girl, aged seventeen, last November. It had grown during four months, at first slowly and then rapidly, but without pain. The interest attaching to the case was that, although a dense osteosarcoma containing osseous spicules, it gave a sense of fluctuation when in position in the jaw, and was removed by enucleation out of its bony case, being contained in a distinct capsule. The false sense of fluctuation was due to the mobility of the tumour within its capsule.

DRS. BAKER, PATTESON, and WHEELER spoke, and DR. BENNETT replied.

Psorospermiosis.

DR. PATTESON made a further communication upon psorospermiosis.

DR. GRAVES stated that, as one of the members of the Reference Committee whose report on Dr. Patteson's preparations had not yet been handed in, he had ample opportunity of studying the bodies in Dr. Patteson's sections which he claims to be coccidia; and he would say, without any prejudice to the report of the Committee, that he had been unable to recognise the bodies as being in any way different from altered epithelium, and that he had seen similar bodies in many epitheliomatous growths, which certainly were not malignant. He thought it was asking too much of the coccidia to cause epithelioma, when these bodies could be seen in degenerated epithelium without any tendency to malignancy.

DR. BEWLEY spoke.

DR. M'WEENEY, while very much inclined to agree with Dr. Patteson as to the interpretation of the bodies in question, thought it a matter for regret that Dr. Patteson was not in a position to lay before the Section a really demonstrative series of preparations. The members of the Section ought not to be expected to accept a fact capable of scientific proof on the *ipse dixit* of any specialist. He also thought it unfortunate that Dr. Patteson had not made an attempt to bring before the Section a summary of the recent literature on this interesting and important subject.

MR. STORY remarked that no evidence could be of much value in

proving cancer to be caused by a micro-organism until the disease had been shown to be inoculable.

DR. PATTESON replied.

Carcinoma Gastri.

DR. GRAVES showed a case of carcinoma of the stomach which he had removed *post mortem* from a girl of twenty-one years of age. For some time before death there had never been any hydrochloric acid in the vomit.

DRS. BOYD, M'WEENEY, PATTESON, and EARL discussed the communication, and

DR. GRAVES replied.

Epithelial Tumour of Neck.

DR. GRAVES showed a rare tumour of the neck, removed in the City of Dublin Hospital by Mr. Wheeler. It was separable from the skin, and was very hard; it was completely surrounded by a fibrous capsule which sent trabeculæ in between the masses of horny epithelium of which the tumour was composed. He was unable to give it a name; but he believed, as it had been growing all the patient's life, that it was a foetal enclosure of epithelium in the cleft of the neck.

MR. WHEELER, at the request of the President, stated that he had removed the tumour referred to by Dr. Graves last Thursday week from a boy aged twelve years. The tumour was situated in the posterior-superior triangle of the neck on the left side, was very painful, and the history of the case revealed that it was present at birth; it appeared before removal to be an atheromatous tumour, or rather three tumours, for there was a distinct separation, and the skin was invaginated into the divisions. After removal the specimen was handed to Dr. Graves, the pathologist of the hospital.

DRS. M'WEENEY and BEWLEY also spoke.

Polyserositis with Moist Gangrene of Lower Limbs, and Septic Infarcts in Kidneys and Spleen.

DR. M. A. BOYD exhibited the heart, kidneys, liver, spleen, and also portion of arteries and veins of lower extremities of a patient under his care in the Mater Misericordiæ Hospital, who died from general dropsy with moist gangrene of lower limbs. The dropsy was due to adhering pericardium, the result of pericarditis a year previously, and for which paracentesis of the pericardium had then been performed successfully. The adhesion was principally confined to the *cul-de-sac* in the neighbourhood of the right auricle and vena cava. Both lungs were found collapsed and carnified, the right one being intimately adherent to its pleura. There was a large infarct in the spleen, and the kidney was

studded over with similar infarcts in its cortex. There was embolic plugging of both femoral arteries and thrombosis of the veins of both lower extremities. The peritoneum exhibited evidences of septic inflammation. The microscope showed numerous chains of cocci in the kidney infarcts. The thrombosed and inflamed veins of the enormously-swollen lower limbs were regarded as the source of the septic infection of the blood, probably erysipelatous in character.

The case was of interest as showing that thrombosis of the veins, no matter how severe, cannot, *per se*, produce moist gangrene without embolic plugging of the arteries existing at same time. As there was no evidence of endocarditis or valvular disease to account for the embolic infarcts, they were regarded as due to septic cocci.

DR. M'WEENEY said he had little to add to the details given about this curious case by Dr. Boyd. The liver was cirrhotic to a most unusual extent in so young a subject. The infection with cocci probably took place during the last few days of life, and was, in his opinion, the cause of the semi-purulent character of the serous effusions. He showed a slide of one of the kidney glomeruli under a $\frac{1}{12}$ oil imm. objective, showing the cocci in pairs and short chains lying between the capillary tuft and Bowman's capsule. There were also cocci in the fibrinous exudation on the pericardium, but in its superficial layer only. The sections were prepared by the Gram method as modified by Weigert, and by Kühne's universal methylene-blue carbonate of ammonia method.

DR. M'WEENEY showed microscopic slides exhibiting the septic emboli of Dr. Boyd's case.

Cysts of Left Cerebral Hemisphere.

DR. FRASER showed the brains, with large cysts in the left hemisphere, obtained from two subjects in the dissecting-room. One of the brains was from a male, aged fifty-four, in which there was well-marked external evidence of brain disease. The right forearm and leg were semiflexed, and in a condition of structural rigidity. The left superior extremity was normal, but the left leg was also semiflexed and rigid, although to a less degree than the right. The subject had been a soldier in his early manhood, and was admitted to the North Union Hospital 24 years ago from an asylum. At that date he was quite dumb, although sight and hearing was good, and he could walk fairly well. Seven years ago he had a fall, and from that date to his death in February of this year he had been confined to bed, paralysis of the upper and lower extremities of the right side being almost complete—sensation, however, being normal.

The second brain was obtained from a female subject, of about thirty years, in which little, if any, external evidence of extensive brain lesion could be detected. Unfortunately in this case no clinical history could

be obtained. The situation of the cysts in both brains, which were filled by colourless fluid, was nearly alike. The posterior portion of the inferior frontal, the lower half of the ascending frontal and parietal gyri, and parts of the supra-marginal and angular gyri, had disappeared in both. In the female brain, in addition, the first and part of the second temporal convolution, as well as all the central lobe, except its basal portion, had also disappeared. The cysts did not communicate with the lateral ventricles, although in both they were only separated from these cavities by a thin membrane. The naked-eye evidence of degeneration was also alike (microscopic examination of the brains not having been made as yet), the anterior pyramids being absent on the left side, and the crura cerebri on the same side reduced to one half their normal size. The cranial nerves and the right hemisphere of both brains were normal as far as naked-eye appearances went.

Effects of Disease of the Vertebrae.

DR. FRASER also showed the dissection of a youth with diseased lower dorsal and upper lumbar vertebrae, in which the sinuses had passed over the rami of the pubic bones, then behind the adductor muscles in both limbs to the flexor aspect of the thigh.

UNITED STATES ARMY.

THE *N. Y. Medical Record* gives some information from Surgeon-General Moore's Annual Report on the U. S. Army for 1888-89. The sickness rate was 44·12 per mille, higher by 2·21 than that of the previous year. The mortality was lower—6·33—that of 1887-88 having been 8·15, and the average of the decade 9·52. The death-rate is lower than in any European army, except the German, in which it is only 2·95 per 1,000. The admissions for syphilis were 85 per mille of strength, those in the British Army being 253; but the rate of discharge for this class of diseases is 3·52 per 1,000 in the U. S. Army—very high in comparison with the German, 0·03, and the English and French, which are little higher than this. Dr. Moore accounts for this difference mainly by the fact that, the U. S. Army being very small, there is no difficulty in obtaining men to fill places vacated by discharge. One hundred and sixty-four medical officers are attached to the army. At examinations for admission to this branch of the service, held in New York in 1889, 36 candidates presented themselves. Nine were found qualified, 17 were rejected, 7 pronounced physically unfit, and 3 withdrew during the examination.

THE SEASONAL PREVALENCE OF PNEUMONIC FEVER.^a

By JOHN WILLIAM MOORE, B.A., M.D., Univ. Dubl., F.R.C.P.I.

IN April, 1875, Dr. T. W. Grimshaw, now Registrar-General for Ireland, and I, read before the Medical Society of the King and Queen's College of Physicians a paper on what we ventured to call "Pythogenic Pneumonia." This paper, which was published in the number of the *Dublin Journal of Medical Science* for May, 1875,^b was based upon observations of pneumonia in Steevens' and Cork-street Hospitals, Dublin, during the summer of 1874, when an epidemic of the disease prevailed in the Irish capital; as well as upon an analysis of the statistics of death from bronchitis and pneumonia registered in Dublin during nine years ending with 1873. In the same communication, the meteorological and epidemic conditions of 1874 were discussed, and our researches seemed to warrant us in drawing the following conclusions:—

1. That the bibliography of pneumonia indicates the existence of a form of the disease which arises under miasmatic influences, and is contagious.

2. That this view is supported by the relation which exists between this form of pneumonia and certain zymotic affections—notably, enteric fever and cholera—and by the resemblance between it and epizoötic pleuro-pneumonia.

3. That its ætiology justifies us in regarding the disease as a zymotic affection and in naming it "*pythogenic pneumonia*."

4. That pythogenic pneumonia presents peculiar clinical features which enable us to distinguish it from ordinary pneumonia.

5. That much of the pneumonia which prevailed in Dublin during 1874 was of this pythogenic character.

6. That whereas ordinary pneumonia is specially prevalent during continuance of cold, dry weather, with high winds and extreme variations in temperature, pythogenic pneumonia reaches its maximum during tolerably *warm* weather, accompanied with a dry air, deficient rainfall, hot sun and rapid evaporation.

The years which have elapsed since the publication of this paper on "Pythogenic Pneumonia" have been fruitful in the literature of the subject to an unprecedented degree. Among the many monographs on pneumonia which have of late appeared, perhaps the most valuable are that by Dr. August Hirsch, Professor of Medicine in the University of Berlin,

^a Reprinted, by permission, from the Transactions of the Ninth Session of the International Medical Congress. Volume V., page 45. Washington, D.C., U.S.A. 1887.

^b Vol. LIX., No. 41. Third Series, page 399.

on the Geographical and Historical Pathology of the Disease,^a and that by the late Dr. C. Friedländer, of Berlin, on the "Micrococci of Pneumonia."^b

Hirsch, after pointing out that pneumonia, even in its narrowest acceptation of fibrinous or so-called croupous pneumonia, is an anatomical term that includes several inflammatory processes differing from one another in their ætiology, goes on to observe that the prevalence of the malady depends very decidedly upon certain influences of season and weather. He gives an elaborate table of percentages of pneumonic prevalence in the several months at a large number of places in Europe and America. According to this table, the largest number of cases falls in the months from February to May; the smallest number in the period from July to September. Taking the average for all the places mentioned in the table, it appears that 34·7 per centum of the patients were attacked in spring (March to May, inclusive); 29·0 in winter (December to February); 18·3 in autumn (September to November); and 18·0 in summer (June to August). The combined percentage for winter and spring is 63·7; that for summer and autumn is 36·3. If the number of cases in summer be taken as 1, then autumn has 1·02, winter 1·6 and spring 1·9. Nearly all the recorded epidemics of pneumonia have occurred in winter and spring. From the foregoing considerations, Hirsch confidently concludes that the origin of the malady is dependent on weather influences proper to winter and spring, and more particularly on *sudden changes of temperature and considerable fluctuations in the proportion of moisture in the air*. He holds that any exceptionally large number of cases of "inflammation of the lungs" at the other seasons, more especially in summer, has coincided with the prevalence of the same meteorological conditions phenomenally at that season.

"But that conclusion," he goes on to say, "is still further borne out by the fact that in those northern regions (Russia, Sweden, Denmark, Germany, England, North of France, and Northern States of the American Union) where the most sudden and severe changes of temperature fall in spring, the largest number of cases is met with in spring, also; while in the warmer and sub-tropical countries (Italy, islands of the Mediterranean, Spain and Portugal, Greece, Algiers, Southern States of the Union, Chili and Peru), which are subject to those meteorological influences, for the most part, in winter, it is winter that represents the proper season of pneumonia. And that applies not merely to sporadic cases, but, in part, at least, to epidemic outbreaks of the malady as well. One other fact deserves to be noticed here, namely, that those tracts of country, especially

^a "Handbook of Geographical and Historical Pathology." Vol. III. Translated from the Second German Edition, by Charles Creighton, M.D. London: The New Sydenham Society. 1886.

^b Fortschritte der Medicin. Band 1, Heft 22, Nov. 22, 1883. Translated for the New Sydenham Society. By Edgar Thurston. 1886.

in the tropics, which are highly favoured in their climate or in the steadiness of the temperature from day to day (Egypt, many parts of India, including Bengal and the plain of Burmah, California, etc.), are subject to pneumonia to a comparatively slight extent."

In the paper on "Pythogenic Pneumonia," by Dr. Grimshaw and myself, will be found a Table, compiled from the returns of the Registrar-General for Ireland, which shows the number of deaths from bronchitis and pneumonia registered in the Dublin Registration District in each quarter of the nine years, 1865-1873, inclusive. According to that Table, of every 100 deaths from bronchitis, 44 on the average occurred in the first quarter of the year, 22 in the second, only 10 in the third, and 24 in the fourth quarter. Thus, the mortality from bronchitis was twice as great in the first as it was in the second quarter, and more than four times greater in the first than in the third quarter.

Very different were the facts as to pneumonia—of every 100 deaths from this disease, 32 on the average occurred in the first quarter, 27 in the second, 16 in the third and 25 in the fourth quarter. The mortality from pneumonia was only *one-fifth* greater in the first than in the second quarter, and only twice as great in the first as in the third quarter. The extreme winter fatality of bronchitis and its low summer fatality were equally wanting in the case of pneumonia.

A careful analysis of the weekly returns of the Registrars-General of England and Ireland for ten years ending with 1885 and of the same returns for the year 1886, brings out a similar remarkable contrast between bronchitis and pneumonia, as to the time of year when these diseases are respectively most prevalent and fatal in London and Dublin.

Table I. contains the figures relating to bronchitis; Table II. those relating to pneumonia. Each Table sets forth the weekly average number of deaths in London and in Dublin from bronchitis and pneumonia, respectively, in the ten years, 1876-85, as well as the actual weekly number of deaths from these diseases in the year 1886.

In Tables III. and IV. these numerical results are thrown into curves.

It will be observed that the statistics for London and for Dublin agree to a remarkable extent. In both cities bronchitis falls to a very low ebb in the third, or summer, quarter of the year (July to September, inclusive), when only 12 per centum of the deaths annually caused by this disease take place in Dublin, and only 11 per centum in London. In the last, or fourth, quarter (October to December, inclusive), the percentage of deaths from bronchitis rises to 27 in Dublin and to 30 in London. The maximal mortality occurs in the first quarter (January to March, inclusive), when it is 38 per centum in both London and Dublin. In the second, or spring, quarter (April to June, inclusive), the deaths from bronchitis declined to 23 per centum in Dublin and to 21 per centum in London.

The mortality from "pneumonic fever" is very differently distributed throughout the year. In the summer quarter more than 14 per centum of the deaths yearly referable to this disease are recorded in Dublin, and more than 15 per centum in London. In the first quarter, the figures are: Dublin, 31 per centum; London, 31 per centum; in the second quarter they are: Dublin, 30 per centum; London, 26 per centum; in the fourth quarter they are: Dublin, 24 per centum; London, 28 per centum.

From these numerical results it, therefore, appears that the fatality and (indirectly) the prevalence of pneumonic fever from season to season do not correspond with the seasonal prevalence and fatality of bronchitis. The latter disease—be it of primary or secondary origin—increases and kills in direct relation to the setting in of cold weather, with excessive relative humidity and increased and frequent precipitation in the form of rain, snow or sleet, and hail. It subsides in prevalence and fatality with the advance of spring and the advent of summer.

Pneumonic fever, on the other hand, increases less quickly in winter and remains more prevalent and fatal in spring and summer than bronchitis; its maximal incidence coincides with the season of dry, harsh winds and hot sunshine in spring, when also the relative humidity is low, precipitation is scanty, while the diurnal range of temperature is extreme.

A closer study of Tables III. and IV. yields some interesting results. In the first place, we observe that the London curves of deaths both from bronchitis and pneumonia vary less from week to week than the corresponding curves for Dublin, which are much less regular and, as it were, more serrated. The reason for this evidently is, that in the case of London we have to deal with a population which is now some twelve times greater than that of Dublin, hence the law of periodicity fulfils itself with greater exactness in the vast population of London than in the comparatively small population of Dublin. The death curves of the larger city are, as it were, seen through a magnifying glass of ten diameters, in the corresponding death curves of Dublin, the variations from week to week being magnified or multiplied tenfold. In the second place, it will be noticed that bronchitis is uniformly throughout the year less fatal in proportion to the population in London than it is in Dublin, while the converse is true of pneumonia. According to the census of 1881. the middle year of the decade with which we are at present concerned, the population of the London Registration District was 3,893,272; that of the Dublin Registration District was 348,293. The average quarterly number of deaths from bronchitis in the ten years—1876–85 were these:—

First quarter, Dublin, 566·9; London, 4358·5.

Second quarter, Dublin, 338·2; London, 2397·1.

Third quarter, Dublin, 172·7; London, 1253·8.

Fourth quarter, Dublin, 395·4; London, 3413·2.

On the other hand, the average quarterly numbers of deaths from pneumonia in the same ten years were:—

First quarter, Dublin, 112·2; London, 1467·2.

Second quarter, Dublin, 108·8; London, 1222·5.

Third quarter, Dublin, 51·4; London, 734·8.

Fourth quarter, Dublin, 85·9; London, 1350·2.

The third point of interest in Tables III. and IV. is the dip in the death curve from bronchitis, both in London and in Dublin, from the seventh to the tenth week of the year. This would seem to depend on several causes—first, the removal by death at the beginning of the year of those individuals who were most susceptible to bronchitis; secondly, the acclimatisation of the surviving population to the continued cold of winter; and thirdly, the prevalence of southwest winds and open weather toward the close of January and early in February. With the setting in of the searching east winds of early spring the death curve again rises at the beginning of March, when also there is a marked rise in the death-toll exacted by pneumonia, more especially in London.

Another curious point is, that the changes in the contour of the death curves apparently occur a week earlier in London than they do in Dublin. Delay in registration in the latter city seems to be the explanation of this otherwise puzzling circumstance.

It will be observed that in the foregoing analysis only statistics of deaths are considered, and these, unfortunately, are of minor value compared with statistics of the prevalence of bronchitis and of pneumonia respectively, were such available. Let us hope that the day is not far distant when registration of disease will be compulsory, as registration of the cause of death is at present. Until this much-needed reform is carried into effect, statistical inquiries into the prevalence of disease in localities and in seasons will want much of that precision which alone can give them scientific value.

How are we to explain the continued frequency of pneumonic fever in summer and autumn? In my opinion the solution of this paradox is to be sought in the consideration of the *pythogenic* origin of the disease in many instances, and particularly in the warm season of the year. In a word, I would regard exposure to cold, extremes of temperature, harsh, drying winds, and other personal or climatological conditions as merely so many *predisposing* causes of the disease, while I would reserve for the introduction into the system of a specific virus or contagium the rôle of of an *exciting* cause—perhaps the sole exciting cause of pneumonic fever. As to the exact nature of that virus or contagium, we are as yet practically ignorant, but the researches and discoveries of Klebs, Eberth, Koch, and Friedländer in connection with the micrococci of pneumonia—the *Pneumococcus* (*Pneumonie-kokken*) of Friedländer, are full of promise. We stand on the threshold of a new Science of Medicine, and before long a

Table IV. Showing the average weekly number of Deaths from Bronchitis and from Pneumonia in the Decade 1876-1885-in London.

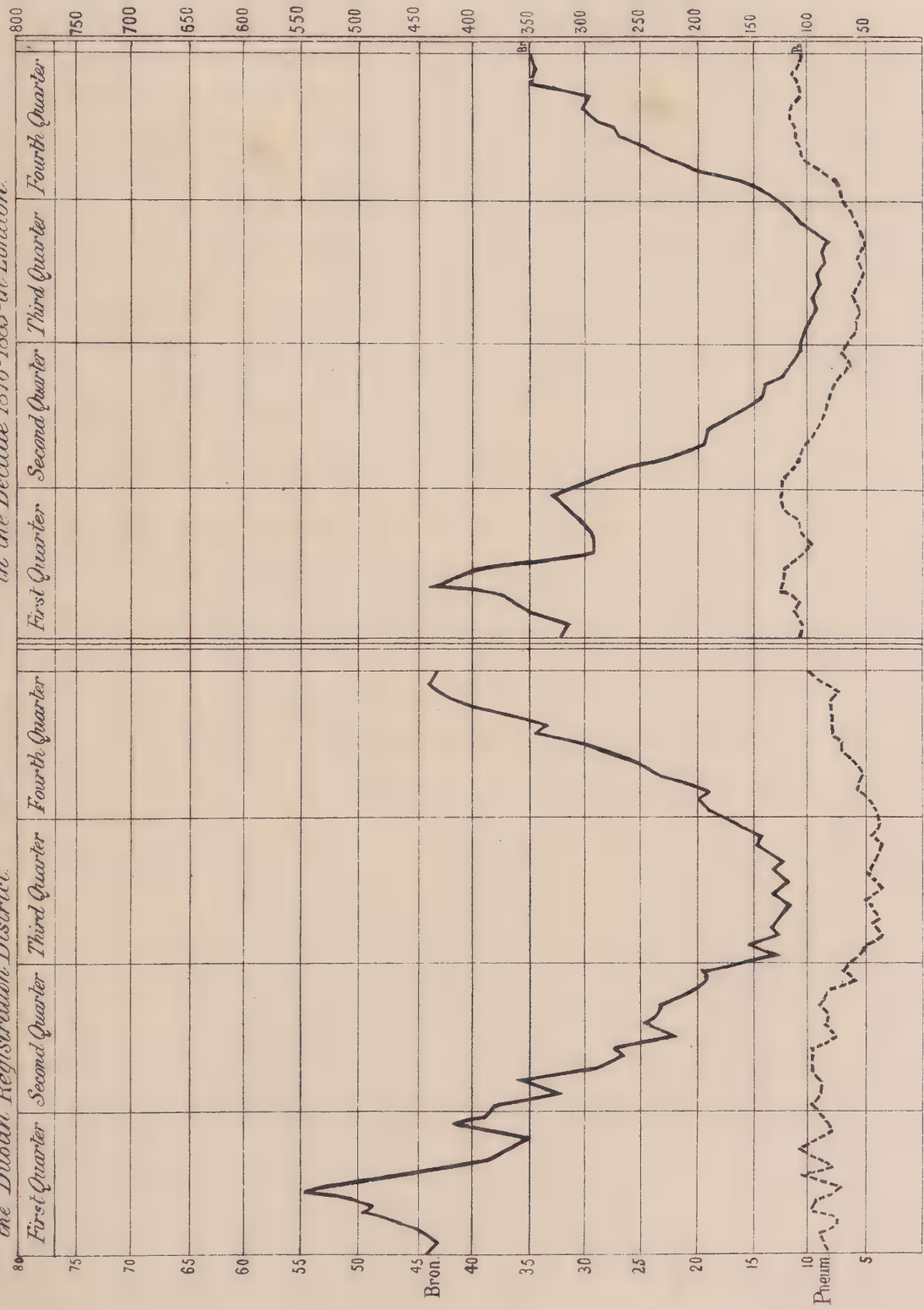
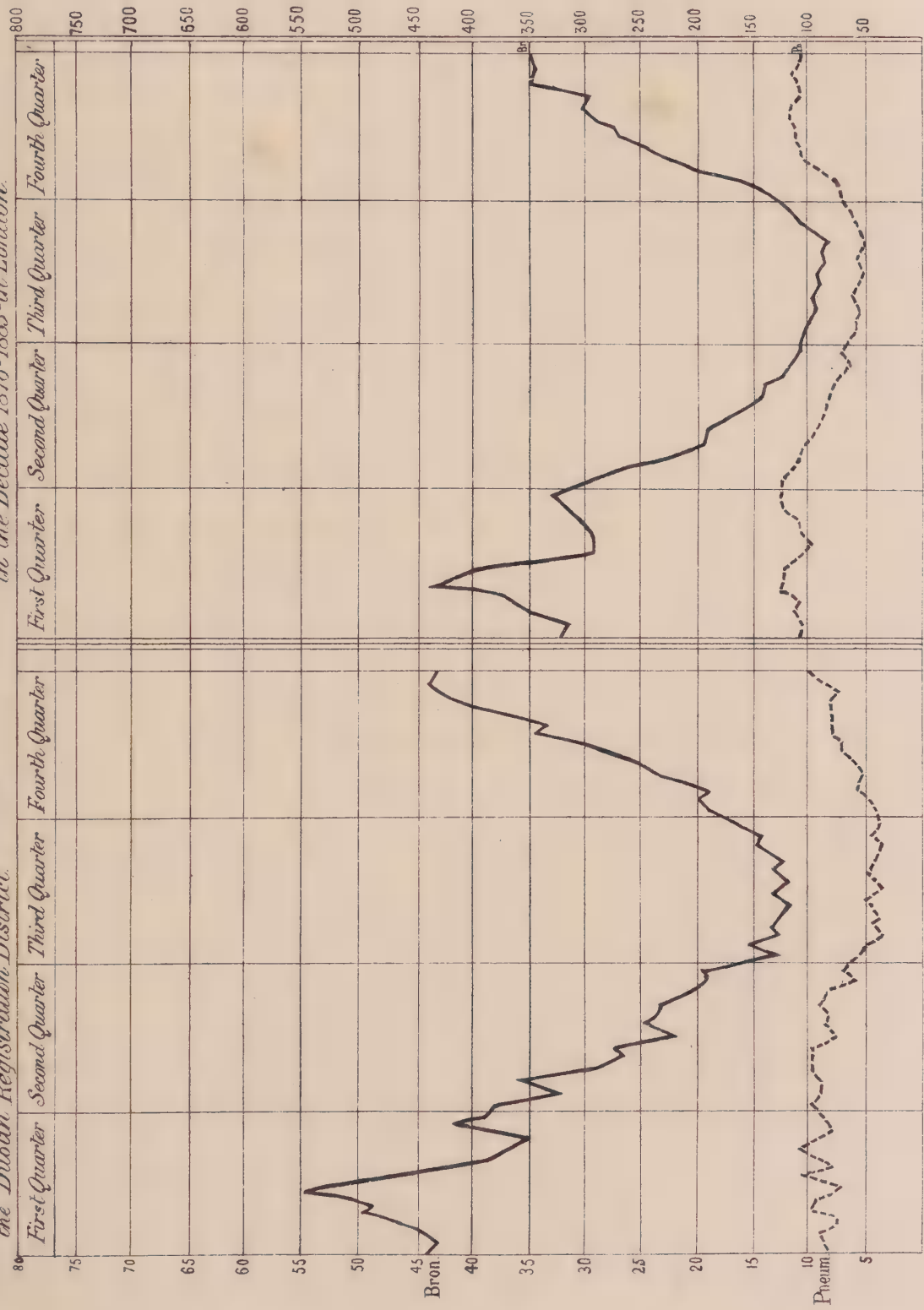


Table III. Showing the average weekly number of Deaths from Bronchitis and from Pneumonia in the Decade 1876-1885 in the Dublin Registration District.



flood of light will doubtless be shed upon the intimate nature and pathology of pneumonia as well as of other blood diseases.

In the "Medical Report of Cork Street Fever Hospital and House of Recovery, Dublin," for the year 1884, I ventured to assert that the claims of pneumonia to be considered a specific fever rested principally upon—

1. Its not infrequent epidemic prevalence, which the bibliography of the disease places beyond dispute.

2. Its proved infectiousness in some instances, as, for example, those observed at Dalton in the spring months of 1883, by Dr. E. Slade King and Mr. Sloane Michell, M.R.C.S., England.^a

3. Its occasional pythogenic origin, and the remarkable correlation which appears to exist between it and enteric fever.

4. Its mode of onset, or "invasion," which exactly resembles that of the recognised specific fevers.

5. The appearance of constitutional symptoms before the development of local signs, or even local symptoms in many instances; in other words, the existence of a true "period of invasion."

6. The critical termination of the febrile movement in all uncomplicated cases.

7. The presence of local epi-phenomena in connection with the skin, such, for example, as eruptions of herpes, the appearance of taches bleuâtres, and the occurrence of desquamation.

8. The development of sequelæ in some cases, such as an attack of nephritis, followed by renal dropsy, ataxia like that observed after typhus or diphtheria, and so on.

9. The discovery of a bacterium in pneumonic exudation, to which analogy, at all events, points as pathognomonic.

In my hospital and private practice I have acquired the habit of expressing the relation of the local lesion in pneumonia, or pneumonic fever, to the essential disorder, in terms of the intestinal lesion in enteric fever to that disease. Just as physicians and pathologists have long since come to avoid the dangerous error—I would even say heresy—of Broussais and his school, who held that the pyrexia or feverishness in enteric fever was symptomatic of and secondary to a local inflammation of the glands of the small intestine, so we shall come in time to avoid the similar and not less dangerous but more widely disseminated error, of regarding the pyrexia in pneumonia as symptomatic of and secondary to a local inflammation of the lungs. The day is seemingly not far distant when we shall speak of "pneumonic fever" in precisely the same way as we use the term "enteric fever" at present—that is, to signify a zymotic or specific blood disease, manifesting itself after the lapse of a certain time—by physical phenomena—objective and subjective—connected, in this instance, with the lungs.

^a Cf. "The Practitioner." April, 1884.

CLINICAL RECORDS.

Notes on Uncommon Forms of Skin Diseases.^a By R. GLASGOW PATTESON, M.B., Univ. Dubl.; Fellow and Member of the Court of Examiners, Royal College of Surgeons in Ireland; Surgeon in charge of the Skin Department, St. Vincent's Hospital, Dublin.

IV. ERYTHEMA MULTIFORME.

As a sequel and contrast to the case related in the last number of these Notes, in which the outbreak of erythema multiforme was associated with marked pain and constitutional disturbance, and was coincident with an attack of erythema nodosum of the lower extremities, I may refer very briefly to an uncomplicated attack of the former affection which has since come under my observation and in which the constitutional symptoms and local inconvenience from the eruption were so slight, that had it not been for the happy incidence of a very mild bronchial catarrh the case would have passed unnoticed, and an instructive lesson in the vagaries of erythematous affections would have remained unobserved and unrecorded.

M. D., aged thirty-four, came to St. Vincent's Hospital on the 14th of last November, complaining of a slight cough and soreness in the chest, which prevented his working. Quite incidentally he referred to a rash which had come out during the night two days previously. It appeared on the back of his neck, and he was quite positive there had been no spots in that situation on going to bed, but awaking in the course of the night he found that part completely covered with an eruption of large spots, associated with some tingling and slight general uneasiness. Those symptoms had in the morning completely disappeared, and before going to bed he had felt neither pain nor discomfort of any kind. When the muffler was removed from his neck it was at once evident that a perfectly characteristic eruption was present, almost absolutely symmetrical in distribution and strictly limited to the back and sides of the neck. The hairy parts were only affected at their borders. The spots were agglomerated in large raised patches, mainly circular but somewhat irregular in outline, still preserving the contour of the original centres by the fusion of which they were formed. Their surfaces were uneven and tuberculated, in parts of a dusky red colour, in parts of a dark brownish

^a Continued from the number of this Journal for December, 1890. Vol. XC. No. 228, p. 532.

hue, which was but little affected by pressure, while some more recently developed were of a brighter tint. There were no spots on the face, forehead, or any other parts of the body. As regards the distribution of the patches it was, as far as it went, almost identical with that described in the previous case, but in this instance the anterior limit of distribution was sharply defined by the posterior border of the sterno-mastoid muscle. No treatment was applied to the skin affection, and no subsequent outbreak took place. The bronchial catarrh yielded rapidly to treatment, and in a few days the patient was practically well, the dark-brown stains persisting for some time after the skin had otherwise resumed its normal appearance.

V. PURPURA.

CASE I.—B. G., aged three, was brought to St. Vincent's Hospital on account of a "speckled rash" which had been variously diagnosticated as measles and typhus fever. A week previously, on October 19th, the first outbreak of spots was noticed on the front of the abdomen and on the back. The child did not complain of any pain; there was no sickness or malaise of any kind apparent, and her appetite remained good. During the week fresh spots appeared involving the legs and arms, still without any constitutional disturbance, even after the administration of the inevitable powder from the chemist round the corner. But on the Sunday a considerable quantity, stated to have been at least an egg-cupful, of dark-coloured blood was passed from the bowels after a motion, and the mother then, thoroughly alarmed, brought the child to the hospital. On examination there was shown a typical example of purpura hæmorrhagica. The spots were generally diffused all over the body, the face alone presenting a natural appearance, in size varying from a pin's head to a split pea, and so closely aggregated that a threepenny piece could not have been placed on a spot of skin free from hæmorrhages. On either arm there was a large dark-coloured ecchymosis where a larger vessel had ruptured; on the left arm, to the inner side and above the elbow, and on the right forearm, about the middle of the ulnar border slightly to the outer side. The temperature was normal, and there was no constitutional disturbance of any kind. The child was ordered a light nutritious diet, and quinine, iron, and ergot were given in combination. A week later, October 31st, the spots on the front of the thorax and abdomen had almost disappeared, and the arms and thighs were much better, only brownish stains remaining over the greater part. On the back, especially about the loins, there were numerous recent extravasations. No further mucous hæmorrhages. The child did not return, but I learned from the mother some time afterwards that she had quite recovered and remained well since.

CASE II.—On November, 26th, 1890, A.M., aged thirty, came to the dispensary for a “sore leg.” He had not felt well for a few days previously, and had suffered from pain about the body and legs, especially in the knees. During the previous night he stated “a sore had broken” on his leg and the pains had completely disappeared. On the centre of the left leg, to the outer side of the tibial crest, there was a raised dusky erythematous patch, slightly tender to the touch. It was irregularly round in shape, with processes radiating out from its margin, and with numerous smaller outlying satellites, exactly like the larger spots of purpura. The central part was obviously the seat of a large subcutaneous extravasation, and was dark purple in colour, sharply marked out on the wider bright-red area around. This redness was sharply demarcated from the surrounding unaffected tissue, thus differing from the nodes in erythema nodosum. There were no spots on any other parts of the body and no mucous hæmorrhages. Some mild general treatment was ordered, and the man was subsequently lost sight of, presumably because of the disappearance of the spots.

I have grouped these two cases together as manifestations of the hæmorrhagic tendency, which show that purpura may occur at all ages, and in both sexes, though undoubtedly commonest in the earlier years of life—from fifteen to twenty—and in the female sex. On account of the distinct effusion of blood in the second case, I regarded it as an example of this affection and not as a case of erythema nodosum, to which at first sight it bore many points of resemblance. More important, however, is the lesson they teach, that the various forms of disease, separated under the titles of *Purpura simplex*, *P. hæmorrhagica* (the *morbis maculosus* of Werlhof), and *P. rheumatica* (the *peliosis rheumatica* of Schönlein) are in reality varied manifestations of one primary disease, and that any variety of combinations may be manifested in its symptomatology. This bears out the views expressed by Immermann, who finds “himself compelled to place *P. simplex* in the same category of disease as the *Morbis maculosus Werlhofii*, and to regard it as a form of the same in a rudimentary stage of development.” He further considers the “*Peliosis rheumatica Schönleinii* as another manifestation of the same disease in which the affections of the joints become substituted for the mucous hæmorrhages, basing his argument on the observation of some most typical cases of Werlhof’s disease in which pains in the joints were also a prominent feature.”^a Such a conception does much to modify our views of a purpuric diathesis.

^a Zuelzer in Eulenburg’s “Real-Encyclopædie der gesammten Heilkunde.” Bd. III. S. 208.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, July 18, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	June 27.	Juhy 4.	July 11.	July 18.		June 27.	July 4.	July 11.	July 18.
Armagh -	12·6	37·8	25·2	37·8	Limerick -	16·8	54·6	19·6	23·8
Belfast -	23·6	21·0	17·3	22·8	Lisburn -	17·2	34·4	4·3	17·2
Cork -	25·9	13·3	18·2	19·6	Londonderry	27·2	25·6	20·8	14·4
Drogheda	39·6	17·6	17·6	22·0	Lurgan -	36·8	13·8	27·6	4·6
Dublin -	17·1	20·3	17·5	15·9	Newry -	15·6	11·7	15·6	27·3
Dundalk-	23·4	15·6	3·9	19·5	Sligo -	5·2	26·0	5·2	0·0
Galway -	26·6	19·0	19·0	30·4	Waterford -	31·2	16·8	4·8	19·2
Kilkenny	23·5	14·1	28·2	18·3	Wexford -	22·5	13·5	18·0	22·5

In the week ending Saturday, June 27, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 19·0), was equal to an average annual death-rate of 20·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·8 per 1,000. In Glasgow the rate was 25·5, and in Edinburgh it was 18·9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21·1 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·3 per 1,000, the rates varying from 0·0 in eight of the districts to 4·8 in Waterford—the 13 deaths from all

causes registered in that district comprising 1 from typhus and 1 from whooping-cough. Among the 116 deaths from all causes registered in Belfast are 4 from whooping-cough, 2 from enteric fever, and 4 from diarrhoea.

In the Dublin Registration District the registered births amounted to 193—109 boys and 84 girls; and the registered deaths to 121—59 males and 62 females.

The deaths, which are 41 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 17·7 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 17·1 per 1,000. During the first twenty-five weeks of the current year the death-rate averaged 27·1 and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 6 deaths from zymotic diseases were registered, being 13 below the average for the corresponding week of the last ten years, and 8 under the number for the preceding week. They comprise 1 from typhus, 3 from whooping-cough, and 1 from diarrhoea.

Thirteen cases of enteric fever were admitted to hospital, being 3 over the admissions for the preceding week. Six enteric fever patients were discharged, 1 patient died, and 34 remained under treatment on Saturday, being 6 over the number in hospital at the close of the preceding week.

Five cases of measles were admitted to hospital, being equal to the admissions for the preceding week. One typhus patient was received, but no case of scarlatina was admitted to hospital. Thirteen cases of measles, 9 of scarlatina, and 5 of typhus remained under treatment in hospital on Saturday.

Twenty-one deaths from diseases of the respiratory system were registered, being 10 below the number for the preceding week and 5 under the average for the 25th week of the last ten years. They comprise 12 from bronchitis and 4 from pneumonia or inflammation of the lungs.

In the week ending Saturday, July 4, the mortality in twenty-eight large English towns, including London (in which the rate was 16·8), was equal to an average annual death-rate of 17·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·6 per 1,000. In Glasgow the rate was 19·7, and in Edinburgh it was 20·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·0 per 1,000, the rates varying from 0·0 in eight of the districts to 8·6 in Lisburn—the 8 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 103 deaths from all causes registered in Belfast are 2 from diarrhœa; and the 16 deaths in Londonderry comprise 2 from the same disease.

In the Dublin Registration District the registered births amounted to 199—104 boys and 95 girls; and the registered deaths to 143—85 males and 58 females.

The deaths, which are 23 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·9 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 20·3 per 1,000. During the first twenty-six weeks of the current year the death-rate averaged 26·9, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Eleven deaths from zymotic diseases were registered, being 5 over the low number for the preceding week, but 10 below the average for the 26th week of the last ten years. They comprise 1 from typhus, 6 from whooping-cough, 2 from enteric fever, and 1 from cerebro-spinal meningitis.

The number of cases of enteric fever admitted to hospital was 7, being 6 below the number for the preceding week. Six enteric fever patients were discharged, and 35 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Three cases of measles and 1 case of scarlatina were admitted to hospital, but no case of typhus was received. Twelve cases of measles, 3 of scarlatina, and 1 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 15, being a decrease of 6 as compared with the number for the preceding week, and 11 below the average for the 26th week of the last ten years. The 15 deaths comprise 8 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

In the week ending Saturday, July 11, the mortality in twenty-eight large English towns, including London (in which the rate was 16·7), was equal to an average annual death-rate of 16·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·8 per 1,000. In Glasgow the rate was 21·5, and in Edinburgh it was 16·7.

The average annual death-rate represented by the deaths registered in

the sixteen principal town districts of Ireland was 17·2 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·0 per 1,000, the rates varying from 0·0 in nine of the districts to 4·6 in Lurgan—the 6 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 85 deaths from all causes registered in Belfast are 2 from enteric fever, and 2 from diarrhoea. The 26 deaths in Cork comprise 1 from whooping-cough and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 168—75 boys and 93 girls; and the registered deaths to 127—64 males and 63 females.

The deaths, which are 23 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 18·5 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 17·5 per 1,000. During the first twenty-seven weeks of the current year the death-rate averaged 26·6, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 8 deaths from zymotic diseases were registered, being 3 under the low number for the preceding week, and 14 below the average for the 27th week of the last ten years. They consist of 1 from influenza, 3 from whooping-cough, 1 from diphtheria, and 3 from enteric fever.

Eight cases of enteric fever were admitted to hospital, being 1 over the number of admissions in the preceding week. Five enteric fever patients were discharged, and 38 remained under treatment on Saturday, being 3 over the number in hospital on Saturday, July 4.

Two cases of measles and 3 of scarlatina were admitted to hospital—8 cases of the former and 5 of the latter disease remained under treatment in hospital on Saturday. There was no case of typhus in hospital at the close of the week.

The number of deaths from diseases of the respiratory system registered is 16, being an increase of 1 as compared with the number for the preceding week, but 5 below the average for the 27th week of the last ten years. The 16 deaths consist of 9 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

In the week ending Saturday, July 18, the mortality in twenty-eight large English towns, including London (in which the rate was 17·0), was equal to an average annual death-rate of 18·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·9 per 1,000. In Glasgow the rate was 17·6, and in Edinburgh it was 17·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·1 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in twelve of the districts to 2·6 in Belfast—the 112 deaths from all causes registered in that district comprising 6 from whooping-cough, 3 from enteric fever, and 4 from diarrhœa. The 28 deaths in Cork comprise 1 each from typhus, enteric fever, and diarrhœa.

In the Dublin Registration District the registered births amounted to 182—102 boys and 80 girls; and the registered deaths to 112—64 males and 48 females.

The deaths, which are 33 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 16·4 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 15·9 per 1,000. During the first twenty-eight weeks of the current year the death-rate averaged 26·2, and was 2·9 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 6 deaths from zymotic diseases were registered, being 2 under the low number for the preceding week, and 14 below the average for the 28th week of the last ten years. They comprise 3 from whooping-cough.

Eight cases of enteric fever were admitted to hospital, being equal to the admissions for the preceding week. Two enteric fever patients were discharged, 1 died, and 43 remained under treatment on Saturday, being 5 over the number in hospital on Saturday, July 11.

One case of measles and one of scarlatina were admitted to hospital; 7 cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday. No case of typhus has been received for the past two weeks.

The number of deaths from diseases of the respiratory system registered is 15, being a decrease of 1 as compared with the number for the preceding week, and 7 below the average for the 28th week of the last ten years. The 15 deaths comprise 8 from bronchitis and 4 from pneumonia or inflammation of the lungs.

VITAL STATISTICS

For four Weeks ending Saturday, August 15, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	July 25	Aug. 1	Aug. 8	Aug. 15		July 25	Aug. 1	Aug. 8	Aug. 15
Armagh -	0·0	12·6	6·3	6·3	Limerick -	11·2	12·6	8·4	12·6
Belfast -	19·6	19·6	16·1	23·0	Lisburn -	17·2	8·6	8·6	4·3
Cork -	21·7	32·9	12·6	25·2	Londonderry	17·6	16·0	22·4	14·4
Drogheda	17·6	35·2	17·6	13·2	Lurgan -	18·4	9·2	13·8	9·2
Dublin -	20·4	18·0	15·9	22·2	Newry -	23·4	11·7	15·6	7·8
Dundalk -	3·9	19·5	31·2	11·7	Sligo -	20·8	15·6	10·4	0·0
Galway -	15·2	11·4	22·8	30·4	Waterford -	14·4	14·4	24·0	7·2
Kilkenny	18·8	51·7	18·8	23·5	Wexford -	9·0	18·0	9·0	9·0

In the week ending Saturday, July 25, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 18·1), was equal to an average annual death-rate of 17·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·0 per 1,000. In Glasgow the rate was 21·2, and in Edinburgh it was 14·5.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 18·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in ten of the districts to 4·7 in Kilkenny—the 4 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 96 deaths from all causes registered in Belfast are 3 from whooping-cough, 1 from simple continued fever, 1 from enteric fever, and 12 from diarrhoea. The 31 deaths in Cork comprise 2 from whooping-cough, 1 from diphtheria, and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 168—84 boys and 84 girls; and the registered deaths to 145—68 males and 77 females.

The deaths, which are 6 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·2 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 20·4 per 1,000. During the first twenty-nine weeks of the current year the death-rate averaged 26·1, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Eighteen deaths from zymotic diseases were registered, being 12 over the low number for the preceding week, but 4 under the average for the 29th week of the last ten years. They comprise 1 from influenza, 3 from whooping-cough, 3 from enteric fever, and 3 from diarrhœa.

Thirteen cases of enteric fever were admitted to hospital, being 5 over the number of admissions for the preceding week. Five patients were discharged, 1 died, and 50 remained under treatment on Saturday, being 7 over the number in hospital on Saturday, July 18.

The hospital admissions include, also, 1 case of typhus (the only case of that disease received during the last three weeks), and 2 cases of measles; but no case of scarlatina was received. One case of typhus, 6 cases of measles, and 1 of scarlatina remained under treatment in hospital on Saturday.

Eighteen deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, but 2 under the average for the 29th week of the last ten years. They comprise 10 from bronchitis, 3 from pneumonia or inflammation of the lungs, and 1 from croup.

In the week ending Saturday, August 1, the mortality in twenty-eight large English towns, including London (in which the rate was 20·5), was equal to an average annual death-rate of 19·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·9 per 1,000. In Glasgow the rate was 18·5, and in Edinburgh it was 15·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·4 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in nine of the districts to 6·3 in Armagh—1 of the 2 deaths from all causes registered in that district having been caused by diarrhœa. Among the 96 deaths from all causes registered in Belfast are 2 from whooping-cough, 1 from diphtheria, 1 from enteric fever, and 11 from diarrhœa.

In the Dublin Registration District the registered births amounted to 153—67 boys and 86 girls; and the registered deaths to 125—57 males and 68 females.

The deaths, which are 20 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 18·3 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 18·0 per 1,000. During the first thirty weeks of the current year the death-rate averaged 25·8, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 10 deaths from zymotic diseases were registered, being 8 under the number for the preceding week, and 9 below the average for the 30th week of the last ten years. They comprise 1 from influenza, 4 from whooping-cough, and 1 from diarrhœa.

Only 4 cases of enteric fever were admitted to hospital, being 9 under the number of admissions for the preceding week. Seven patients were discharged and 47 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, July 25.

The hospital admissions for the week include, also, 1 case of typhus, 2 cases of scarlatina, and 5 of measles. Two cases of typhus, 3 of scarlatina, and 9 of measles remained under treatment in hospital on Saturday.

Nineteen deaths from diseases of the respiratory system were registered, being 1 over the number for the preceding week, and 1 above the average for the 30th week of the last ten years. They comprise 13 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 1 from croup.

In the week ending Saturday, August 8, the mortality in twenty-eight large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 19·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 15·9 per 1,000. In Glasgow the rate was 19·3, and in Edinburgh it was 12·3.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 15·8 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in twelve of the districts to 3·8 in Galway—the 6 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 79 deaths from all causes registered in Belfast are 2 from whooping-cough, 1 from enteric fever, and 10 from diarrhœa.

In the Dublin Registration District the registered births amounted to 173—87 boys and 86 girls; and the registered deaths to 113—63 males and 50 females.

The deaths, which are 28 under the average number for the corresponding week of the last ten years, represent an annual rate of

mortality of 16·5 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 15·9 per 1,000. During the first thirty-one weeks of the current year the death-rate averaged 25·5, and was 2·9 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 8 deaths from zymotic diseases were registered, being 2 under the low number for the preceding week, and 14 below the average for the 31st week of the last ten years. They comprise 1 from influenza, 4 from whooping-cough, 1 from enteric fever, and 1 from diarrhœa.

Thirteen cases of enteric fever were admitted to hospital, being 9 over the admissions for the preceding week. Three enteric fever patients were discharged, and 57 remained under treatment on Saturday, being 10 over the number in hospital on Saturday, August 1.

The hospital admissions for the week include, also, 2 cases of measles and 1 case of scarlatina; but no case of typhus was received. Nine cases of measles, 4 of scarlatina, and 2 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 13, being 6 below the number for the preceding week, and 3 under the average for the 31st week of the last ten years. The 13 deaths comprise 8 from bronchitis, 3 from pneumonia or inflammation of the lungs, and 1 from croup.

In the week ending Saturday, August 15, the mortality in twenty-eight large English towns, including London (in which the rate was 20·1), was equal to an average annual death-rate of 18·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·2 per 1,000. In Glasgow the rate was 19·9, and in Edinburgh it was 14·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 20·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in nine of the districts to 4·7 in Belfast and Kilkenny. The 113 deaths from all causes registered in Belfast comprised 3 from whooping-cough, 3 from enteric fever, and 17 from diarrhœa; and the 5 deaths in Kilkenny comprised 1 from typhus. Among the 36 deaths from all causes registered in Cork were 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 216—107 boys and 109 girls; and the registered deaths to 156—73 males and 83 females.

The deaths, which are 3 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of

22·8 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the first thirty-two weeks of the current year the death-rate averaged 25·4, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Nineteen deaths from zymotic diseases were registered, being 11 over the very low number for the preceding week, but 5 under the average for the 32nd week of the last ten years. They comprise 6 from whooping-cough, 2 from enteric fever, 6 from diarrhœa, and 2 from dysentery.

The number of cases of enteric fever admitted to hospital is 6, being a decrease of 7 as compared with the admissions for the preceding week, but 2 over the number for the week ended August 1. Seven enteric fever patients were discharged, 2 died, and 54 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 3 cases of typhus (of which disease, during the course of the five weeks preceding, only 2 cases had been admitted to hospital), 2 of scarlatina, and 1 of measles. Four cases of typhus, 4 of scarlatina, and 10 of measles remained under treatment in hospital on Saturday.

Twenty-two deaths from diseases of the respiratory system were registered, being 9 over the number for the preceding week, and 2 above the average for the 32nd week of the last ten years. They comprise 8 from bronchitis, 8 from pneumonia, and 1 from croup.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of July, 1891.*

Mean Height of Barometer,	-	-	-	29·936 inches
Maximal Height of Barometer (on 14th, at 9 a.m.),				30·365 „
Minimal Height of Barometer (on 6th, at 4 20 p.m.)				29·434 „
Mean Dry-bulb Temperature,	-	-	-	58·3°.
Mean Wet-bulb Temperature,	-	-	-	55·2°.
Mean Dew-point Temperature,	-	-	-	52·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·394 inch.
Mean Humidity, -	-	-	-	81·4 per cent.
Highest Temperature in Shade (on 16th)	-			72·8°.
Lowest Temperature in Shade (on 10th),	-			46·8°.
Lowest Temperature on Grass (Radiation) (on 10th),				43·0°.
Mean Amount of Cloud, -	-	-	-	65·5 per cent.
Rainfall (on 15 days),	-	-	-	2·187 inches.
Greatest Daily Rainfall (on 3rd),	-	-	-	·401 inch.
General Directions of Wind,	-	-	-	N.W., S.W.

Remarks.

A changeable, squally, showery month, of average temperature and rainfall, with a great preponderance of north-westerly winds—a very common state of things in an Irish July.

In Dublin the arithmetical mean temperature (59.0°) was decidedly below the average (60.6°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 58.3° . In the twenty-six years ending with 1890, July was coldest in 1879 (the “cold year”) (M. T. = 57.2°). It was warmest in 1887 (M. T. = 63.7°), and in 1868 (the “warm year”) (M. T. = 63.5°). In 1886 the M. T. was 61.0° ; in 1888 it was as low as 57.3° ; in 1889 it was 58.7° , and in 1890 it was 58.1° . From this, 1887 proves to have been the warmest since the present records commenced, whilst July, 1888, was almost the coldest.

The mean height of the barometer was 29.936 inches, or 0.021 inch above the corrected average value for July—namely, 29.915 inches. The mercury marked 30.365 inches at 9 a.m. of the 14th, and fell to 29.434 inches at 4 20 p.m. of the 6th. The observed range of atmospherical pressure was, therefore, 0.931 inches—that is, a little less than an inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 58.3° , or 0.3° above the value for June, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.* — *Min.* $\times .465$), the value was 58.6° , or 1.6° below the average mean temperature for July, calculated in the same way, in the twenty-five years, 1865–89, inclusive (60.2°). The arithmetical mean of the maximal and minimal readings was 59.0° , compared with a twenty-five years’ average of 60.6° . On the 16th, the thermometer in the screen rose to 72.8° —wind, S.W.; on the 10th the temperature fell to 46.8° —wind, N.N.W. The minimum on the grass was 43.0° on this same date.

The rainfall was 2.187 inches, distributed over 15 days. The average rainfall for July in the twenty-five years, 1865–89, inclusive, was 2.420 inches, and the average number of rainy days was 17.2. The rainfall, therefore, was somewhat below the average, while the rainy days were also below it. In 1880 the rainfall in July was very large—6.087 inches on 24 days; in 1871 also 4.391 inches fell on 28 days. On the other hand, in 1870, only .539 of an inch was measured on 8 days; in 1869, the fall was only .739 of an inch on 9 days, and in 1868, only .741 of an inch fell on but 5 days.

High winds were noted on 10 days, and attained the force of a fresh or moderate gale on two occasions—viz., the 6th and 8th. Temperature reached or exceeded 70° in the screen on only 3 days. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In July, 1888, the maximum was 68.7° . Thunderstorms occurred on the 3rd and 20th.

Cyclonic conditions held over the W. and N.W. of Europe throughout

the period ending Saturday, the 4th, and the weather was, therefore, very changeable and showery, with fresh southwesterly winds (at first, S., then veering to W. and N.W.). Frequent and heavy showers occurred. These were accompanied by thunder and lightning on Friday. In London a heavy fall of rain took place on Wednesday, the 1st, and again on Friday, the 3rd, when thunderstorms occurred at Aberdeen, Leith, and Cambridge, as well as in Dublin. On the last-named day, the wind drew round to N.W. and a general though temporary improvement in the weather occurred. In Dublin the thermometers in the screen fell to $50\cdot2^{\circ}$ on Friday. Rain fell to the amount of $\cdot803$ inch, $\cdot401$ inch being the result of Friday's thunderstorms.

During the earlier part of the week ended Saturday, the 11th, the weather was very unsettled, stormy, cold, and rainy. An improvement set in after Wednesday, the 8th; but to the close, it was very cloudy and dull, except for a few hours on Thursday afternoon, when pleasant sunshine was enjoyed. The bad weather, which was general, was brought about by the passage eastwards across the British Islands of a rather deep and complex depression which first appeared over Ireland early on the morning of Sunday, the 5th. This system at first spread out northwards, but then travelled across the North of Ireland and South of Scotland to the North Sea, where it was found on Tuesday morning. It then changed its course, moving southeastwards and finally eastwards, disappearing over the southern part of the Baltic on Friday. Meanwhile an area of high barometer came in over Ireland, causing some improvement in the weather. On Monday and Wednesday the wind reached gale-force in and about Dublin. In England heavy falls of rain and hail occurred, accompanied by much thunder and lightning. In Dublin the mean height of the barometer was $29\cdot897$ inches, pressure ranging from $29\cdot434$ inches at 4 20 p.m. of Monday (wind, S.W.), to $30\cdot211$ inches at 9 p.m. of Thursday (wind, N.N.W.). The corrected mean temperature was $55\cdot9^{\circ}$. The mean of the dry bulb readings at 9 a.m. and 9 p.m. was $55\cdot4^{\circ}$. The screened thermometers fell to $46\cdot8^{\circ}$ on Friday. The rainfall was $\cdot494$ inch on three rainy days. Of this quantity $\cdot213$ inch fell on Monday.

A very great improvement was noticed in the weather of the week ended Saturday, the 18th, except in Scotland where it became rainy after Wednesday, when a depression approached Great Britain from Germany. Atmospheric pressure was high, but of unstable equilibrium, during the first part of the week. On Tuesday morning a depression formed over Germany, whence it began to travel slowly northwestwards, its centre reaching Berlin on Wednesday morning, the middle of the North Sea on Thursday, and the Hebrides on Friday. It caused heavy rain at first in Germany, Denmark, and Holland, then in the N.E. of England and the E. and N. of Scotland. On Friday, a secondary low pressure

system moved northwestwards from the Bay of Biscay towards Ireland, where it caused a heavy fall of warm rain during the ensuing night. The S.W. winds in the rear of these disturbances brought a great increase of temperature to the British Islands. On the whole, fair summerlike weather prevailed throughout the week. In Dublin the mean height of the barometer was 30·024 inches, pressure rising to 30·365 inches, at 9 a.m. of Tuesday (wind, N.E.). The corrected mean temperature was 61·2°, or 5·3° above the value for the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 61·1°. The thermometers in the screen rose to 72·8° on Thursday. The rainfall was ·213 inch on two days—·132 inch being referred to Saturday.

In the British Islands the weather of the week ended Saturday, the 25th, was distinctly of a changeable and very broken character. Thunderstorms occurred in England on Sunday, Tuesday, and Wednesday—in Dublin on the evening of Monday, the 20th; while heavy rains fell in Scotland, and frequent heavy showers with strong winds—first from S.W., and afterwards from N.W.—were experienced in Ireland. As was to be expected under these circumstances, temperature ruled rather low throughout at all British and Irish stations. Until Tuesday evening, the barometer was low to the N.W. of the British Islands, relatively high over the Peninsula, France, and Germany—hence the fresh S.W. winds of the earlier part of the week. On Wednesday morning the lowest pressure was found off the E. of Scotland and N.E. of England, so that northerly to westerly winds prevailed. This state of things continued until Friday, when the barometer rose, except in the N. of Scotland, and the weather became dry while continuing cool and rather cloudy. In Dublin the mean height of the barometer was 29·998 inches. The corrected mean temperature was 60·4° compared with 61·2° in the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 59·8°. The rainfall amounted to ·524 inch on four days, of which ·250 inch fell on Sunday. The prevailing winds were S.W. to N.W.

Although changeable and rather cold, with strong north-westerly and northerly winds, the weather was favourable in Ireland, compared with Great Britain, where large quantities of rain fell, accompanied by thunder and lightning in many instances. Throughout the period the barometer was highest over Ireland, and between Monday, the 27th, and Friday, the 31st, gradients for N.W. and N. winds were steep, owing to the appearance of successive depressions over the North Sea and its various coasts. Hence the bad weather felt in Great Britain and the comparative immunity from the same enjoyed in Ireland. In Dublin, Sunday was cloudy and drizzling at first, then summerlike. In the evening turreted cumulus was seen to S., and next day severe thunderstorms occurred in the South of England. Two fine days followed; but

on Tuesday night rain fell heavily for a time. The weather then became cold and dusty, but dry—so remaining until the end of the month.

The rainfall in Dublin during the seven months ending July 31st has amounted to 10·935 inches on 92 days, compared with 15·587 inches on 118 days during the same period in 1890, 13·146 inches on 112 days in 1889, 15·994 inches on 109 days in 1888, 7·935 inches on 80 days in 1887, and a 25 years' average of 14·733 inches on 112·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 1·325 inches on 18 days, compared with 1·489 inches, distributed over 18 days in 1890. Of this quantity ·255 inch fell on the 18th, and ·220 inch on the 5th. The total fall since January 1 has been 13·280 inches on 88 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was 1·36 inches on 17 days. Maximum, equal to ·18 inch on 3rd. The total fall since January 1 has been 8·05 inches on 84 days, compared with a 6 years' average of 12·996 inches on 99·49 days.

PERISCOPE.

DRESSING FOR THE CHEST IN PNEUMONIA AND PLEURISY.

DR. THORNTON PARKER recommends (*Medical News*, Philadelphia, May 9th, 1891) Von Gieth's (Munich) dressing for the chest in pneumonia and pleurisy to be applied as follows:—"The method which has been found most convenient is to pour the quantity of olive oil required into a moderate-sized bowl which has been previously warmed, which will take off the chill from the patient. A large strip of soft cotton cloth is then prepared, to completely encircle the patient's chest. The strip is then placed in the bowl of oil until it is supersaturated with the material. This is then applied to the patient's chest, and outside the strip a second one is placed of dry cotton cloth, and when necessary a third strip may be used. The strips are secured and held firmly in place by safety-pins." Pure olive oil must be used. The author finds the treatment grateful to the patient and successful in result. Von Gieth considers it does good by maintaining equable temperature where warmth is most wanted.

FŒTOR OF LOCHIAL DISCHARGES.

ROBERT BOXALL, M.D., in an interesting paper on Fœtor of Lochial Discharges (*Practitioner*, May, 1891), draws the following conclusions:—(1) That septic infection may take place without fœtor. (2) That fœtor may occur without sepsis or fever. (3) That fœtor is more frequent in cases where the tissues are bruised and torn, and therefore in primiparæ and operation cases. (4) The fœtor is generally (though not in-

variably) associated with fever, but in such cases the fever almost invariably precedes the fœtor by a considerable interval. (5) That the presence or absence of fœtor is a very uncertain guide to the presence or absence of sepsis. (6) That in any case, as fœtor invariably indicates a failure to maintain local asepsis, vigorous antiseptic measures should be at once instituted. (7) That the vulva and vagina should be first cleansed, and only when this has been done and when real necessity exists, should the cleansing be extended to the interior of the uterus.

BRITISH MEDICAL SERVICE.

THE following is the official list of Surgeons on Probation of the Medical Staff of the British Army who were successful at both the London and Netley Examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—

July 30th 1891.

	Combined Marks		Combined Marks
^a 1 Porter, F. J. W.	5,940	12 Tate, G. W.	4,760
2 Robinson, O. L.	5,370	13 Faichnie, N.	4,745
^b 3 Stalkartt, C. E. G.	5,235	14 Lenehan, T. J.	4,725
4 Gibbard, T. W.	5,160	15 McDowell, F.	4,710
5 Healy, C. J.	4,992	16 Begbie, F. W.	4,665
6 Burtchaell, C. H.	4,975	17 MacCarthy, J. A. O.	4,656
7 Buist, H. J. M.	4,970	18 Austin, J. H. E.	4,610
8 Stanistreet, G. B.	4,930	19 Duggan, C. W.	4,595
9 Brown, F. J.	4,910	20 Gerrard, J. J.	4,565
10 Hardy, W. E.	4,900	21 Jameson, J. C.	4,425
11 Brogden, J. E.	4,777		

LEPROSY.

THE *N. Y. Medical Record* of 13th December, 1890, mentions a report on Leprosy made to the State Department at Washington by Mr. E. H. Plumacher, U. S. Consul at Maracaibo, in Venezuela. In it are stated some facts which bear upon two of the most important questions connected with this disease—communicability and heredity. An island four miles from Maracaibo has been adopted for a leper-settlement. To this retreat healthy women have been permitted to accompany leprous husbands, and have lived with them through the last stages of the disease,

^a Gained the Herbert Prize of £20, with the Montefiore Medal and Prize of 20 guineas, with the De Chaumont Prize in Hygiene.

^b Gained the Montefiore second Prize.

and daughters have tended mothers to the end, returning to the world in unimpaired health. In the belief that marriages between lepers would be unfruitful, such unions have been allowed in the settlement. Two children have been born of such marriages, and neither child has as yet shown any evidence of having inherited the disease. One of them, having lived with his leprous parents for fourteen years without contamination, has been pronounced clean and permitted to enter the outer world.

THE ALVARENGA PRIZE FOR 1891 OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

WE are informed by Dr. Charles W. Dulles that this valuable prize has been awarded to Dr. L. Duncan Bulkley, of New York, for his essay on Syphilis Insontium.

PRURITUS ANI.

DR. OHMANN-DUMESNIL recommends (*St. Louis Medical and Surgical Journal*, July, 1891) the following local application, the amount of carbolic acid to be varied to meet the exigencies of the case:—R. Hydrargyr. bichlorid. gr. $1\frac{1}{2}$; ammon. chlorid., gr. 2; acidi carbolic, 3 i.; glycerini, 3 ii.; aquæ rosæ, q. s., ad. 3 vi. M. Sig. Apply locally, morning and evening.

TREATMENT FOR FRECKLES.

THE following is recommended (*Lyon Médical*):—R. Tinct. benzin, 10 parts; rose water, 40 parts; mix thoroughly and add chloride of ammonium, 4 parts; dilute hydrochloric acid, 5 parts; glycerine, 30 parts. M. Sig. The freckles to be touched twice daily with a small brush dipped in the above.

PEROXIDE OF HYDROGEN IN DIABETES.

DR. B. W. RICHARDSON, F.R.S., writes (*Asclepiad*, XXX.):—Codein, three grains; alcohol, sp. grav. 830, two fluid drachms; solution of peroxide of hydrogen (10 volume strength), two fluid ounces; distilled water to make 12 fluid ounces. This forms a mixture, of which half a fluid ounce may be taken three times a day in a wineglassful of water. It is the most useful medicine I have ever prescribed in diabetes.

BRONCHIECTASIS IN YOUNG CHILDREN.

DR. J. WALTER CARR reports (*Practitioner*, Feb., 1891) six cases of bronchiectasis in young children. He considers this disease more common in childhood than it is usually considered, being apt to be overlooked; the case being considered one of bronchitis, with which it is usually coexistent, or, perhaps, in the later stage as one of phthisis. The most important physical signs are the gradual supervention upon the ordinary evidences

of bronchitis or broncho-pneumonia, of distinct cavernous signs with moderately loud gurgling and bubbling râles, and the variation from day to day in the number and the character of these moist sounds.

MORTALITY IN EUROPEAN ARMIES.

RECENT statistics relative to the mortality among European troops in time of peace, show that the Spanish army occupies the place of dishonour in this particular, with a death-rate of 13 per mille. Russia comes next with one of 9, then Italy with one of 7.74. Next in order come Austria with a mortality of, in round numbers, 7 in the thousand; France with 6, England with a little over 5, Belgium with a little over 4, and Germany with a little over 4. Consumption is rifest among English soldiers, and least prevalent among the French.—*N. Y. Medical Record*.

CANDIDATES' ANSWERS.

THE following are a few of the answers of candidates for medical degrees, examined by the Minnesota State Board of Medical Examiners. The *North Western Lancet* guarantees their genuineness, and does not say that the authors were rejected:—"Symptoms of edema of the glottis are that the patient feels husky and has sore throat. I would amputate it if necessary. I would do the operation within three or four months if it was a bad case." "The dose of morph. sulph. for a child of five years, hypodermically, would be one-fourth grain, and if that doesn't give relief, I would give one-half grain." "The dose of antipyrin for a child five years old is fifteen grains every three hours." Q. "What is an element?"—A. "Earth, water, wind, fire." Q. "Definition of Inorganic Chemistry?"—A. "Chemically examining of metals or in geology for lime phosphates or any minerals." Q. "Definition of Organic Chemistry?"—A. "Of flesh, stomach, bowels, liver, or any organic matter."—"The Sterno-Cleido-Mastoid muscle takes its origin from the mastoid portion of the temporal bone, runs down the neck, and is inserted into the upper and back portion of the scapula."—"The coverings of the femoral artery is the same as of hernia, it lies between the femoral vein and sciatic nerve."—"The kidney is a muscular formation, in shape oblong, color quite dark, weight about one pound to one and a half, but may vary considerable."—"Parts severed in amputation at upper third of thigh—just avoiding the insertion of the glutei muscles, passing through the Taylor's muscle, periosteum and femur."—"The sympathetic system is composed of all the filament of nerves that start from the spinal cord, and are distributed to all parts of the system, especially the brain. The cervical portion ramifies the encephalon in general. The dorsal portion ramifies the anus."—"Extra uterine pregnancy may be a fungoid growth or tumor fibroid in its character or any extra growth in the uterus would be called extra-uterine pregnancy."—"Trismus

neynatorum—a peculiar trouble of the eye, generally congenital, falling of the lids giving a unnatural look to the ordinary face of a child.” Q. “Give the distinctive histological features of carcinoma.”—A. “Carcinoma will show a general dropsical condition. Transparent condition of all the fluids except the urine which may show considerable deposit, scanty, and hot. The patient’s puls, heavy, large, does not care to move.” “Tubercle of the lung is supposed cause of consumption and the one generally advocated and preventive treatment is any that will burn up them or destroy them I am a believer in alcohol but the way and its action I am unable to give.” Q. “Test for arsenic in wall paper.”—A. “Don’t know; if I should happen to have a case where it was necessary I should look it up. I know it is to burn something in a room and the fumes will turn the paper green.” Q. “How would you tell Sulph. Morphia from Sulph. Quinia?”—A. “Sulph. Quinia is white, flaky, glistening. Has a metallic look. Tastes bitter. Never saw any pure Sulph. Morphia in my life. Have no use for either.” The last question shows some inelegance in the examiner’s latinity.

TIN PLATES IN TREATMENT OF CHRONIC ULCERS.

DR. E. R. MORAS gives (*Medical News*, Philadelphia, December 13th, 1890) notes of cases of indolent ulcers of the leg treated by the continuous application of tin plates, in which immediate improvement was followed by rapid cure.

AGE DISTRIBUTION OF ECZEMA.

DR. L. DUNCAN BULKLEY gives (*Medical News*, Philadelphia, Jan. 31, 1891) an interesting table contrasting the percentage of eczema patients at different ages with the percentage of individuals alive at those ages as shown by the census. The percentage of eczema patients is higher than the percentage of individuals alive from birth to 4 years, and again from 35 to 60. The percentage of eczema falls below the other percentage from 4 to 25 and from 60 on.

SIX SUCCESSFUL OPERATIONS FOR BILIARY CALCULI.

DR. MILLER, Lexington, Kentucky, reports six successful operations for biliary calculi. In one case there was but a single calculus, in another case the calculi numbered 240. Strange to say all the patients were women.—*The Philadelphia Medical and Surgical Reporter*, October 25th, 1890.

A NEW MODE OF ADMINISTERING SULFONAL.

DR. D. D. STEWARD recommends (*Medical News*, Philadelphia, Jan 31, 1891) dissolving the sulfonal in about 3vi. of *boiling* water, rapidly cooling by addition of cold water, to a drinkable temperature (which must be the hottest bearable), and drinking it. It is rapidly absorbed, causes

early and sound sleep, and is not followed by the annoying semi-somnolence next day which is so common a result of the ordinary method of administration.

ACNE.

Les Nouveaux Remèdes, No. 20, recommends the following ointment for acne:—Camphor, 10 grammes; vaselin, 10 grammes; β naphthol, 10 grammes; precipitated sulphur, 50 grammes; black soap, 15 grammes; chalk, 5 grammes. The ointment is to be applied for five minutes, at night, and then washed off.

COLD BATHS IN TYPHOID.

At a meeting of the Société Médicale des Hôpitaux, on the 31st of October, M. Juhel-Renoy, in the course of an interesting communication, stated that the cold bath treatment of typhoid had reduced the mortality of the fever to 5 per cent.—*Le Mercredi Médical*, No. 44.

FRACTURE OF THE LARYNX.

M. SOKOLOWSKI gives a case of fracture of the larynx of a woman, aged twenty years, from a direct blow. She suffered from cervical emphysema and great difficulty of breathing. The thyroid and cricoid were both fractured. Tracheotomy was performed, and the patient made a good recovery.—*Le Mercredi Médical*, No. 44.

A RUSSIAN REMEDY FOR RETENTION OF URINE.

DR. C. D. SPIVAK, Philadelphia, in a letter to the *Times and Register*, October 18th, gives the history of a Russian peasant who, suffering from retention of urine, adopted the domestic remedy of inserting a *pediculus corporis* into the urethra, with the desired result.

VARIX OF THE ŒSOPHAGEAL VEINS.

M. LETULLE, at a meeting of the Société Médicale des Hôpitaux on the 17th of October, related a case of varix of the œsophageal veins in a chronic drunkard. He had a violent attack of bleeding, from which he died. The autopsy confirmed the diagnosis.—*Le Mercredi Médical*, No. 42.

A COUNTRY PRACTITIONER.

THE *N. Y. Medical Record* says that the following medical opinion was recently supplied to a New York Insurance Co. by an up-country examiner. It looks genuine:—"I find the abdominal mustels relaxed, so much so that they allow the bowls to fall low in the pelvis, and by so give preshure upon the womb, rectum and by the presher, impeded the free flow from the femeral vein &c &c now by this relaxation of the abdominal mustels of

corse the upper organs are unsupported aspetially on the right side such as liver and right lung. This giving an allgone fealing &c. I am speaking of Mrs. Nelly D——."

ILLEGITIMATE BIRTHS.

THE figures for illegitimacy for Continental cities in recent years are as follows:—Vienna, 50·6 per cent.; Prague, 49·6; Rome, 44·5; Stockholm, 40·0; Paris, 28·5; Copenhagen, 25·0; Brussels, 22·5; St. Petersburg, 20·2; Lisbon, 21·0.—*The Philadelphia Medical and Surgical Reporter*, Oct. 11th, 1890.

CANCER OF THE SMALL INTESTINE.

M. RIEGEL (*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 43) reports a case of cancer of the small intestine in a woman sixty-eight years old. There was no hæmatemesis, and no tumour could be felt. The autopsy showed the presence of a ring of epithelioma at the commencement of the jejunum.

CURE OF LARYNGEAL TUBERCULOSIS.

DR. WATSON WILLIAMS records (*Bristol Medical Chirurgical Journal*, March, 1891) the cure of a case of laryngeal tuberculosis by the continued local use of a 1 in 250 solution of biniodide of mercury. His paper is illustrated by drawings of the state of the larynx at different periods. There were tubercles which ulcerated, and tubercle bacilli, and a bad family history.

RESIDENTIAL COLLEGES FOR MEDICAL STUDENTS.

PROFESSOR CLARKE (*Glasgow Medical Journal*, March, 1891) urges the importance of providing residential colleges for medical students. He describes what has been done in this way already in London and elsewhere. Professor Gedde's efforts in Edinburgh receive due and appreciative notice.

REMOVAL OF RENAL CALCULI FROM LUMBAR REGION.

MARIE B. WERNER, M.D., records (*Medical News*, Philadelphia, 7th Feb., 1891) the removal of renal calculi from the muscles of the left lumbar region. One of the calculi formed a cast of the pelvis of the kidney and of part of the ureter. They had been extruded from the kidney, and at the time of operation the urine contained neither albumen nor pus.

CREASOTE PILLS.

PURE creasote (beechwood), 3 grammes; balsam of Tolu, 8 grammes; liquorice and magnesia, a sufficiency to make 80 pills. Eight to fifteen pills to be taken daily.—*Les Nouveaux Rémèdes*, No. 20.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

OCTOBER 1, 1891.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*On Cirrhosis of the Lung.*^a By J. MAGEE FINNY, M.D., Dublin; President of the Royal College of Physicians of Ireland; King's Professor of Practice of Medicine in the School of Physic, Ireland; Physician, Sir Patrick Dun's Hospital.

THIS specimen of the fibroid changes in the lung, to which attention was first called in 1838 by Sir Dominic Corrigan, Bart., M.D., and by whom it was named "Cirrhosis," is an extremely well-marked example of this strange and comparatively rare disease.

In 1883 I had the honour of submitting to this Academy another specimen of the same, in which the upper lobes of the right lung were converted into a "honeycombed" mass of fibrous tissue, as depicted in this drawing (see *Trans. Acad. Med. Irel.*, 1883, Vol. I., p. 52), and in which the pleura was very slightly involved. It contrasts very visibly with the present specimen where the pleura is enormously thickened—in some places to the extent of $\frac{7}{8}$ of an inch—and which was so intimately adherent to the intercostals and ribs, that it was with the greatest difficulty my colleague, Professor Purser, who kindly made the *post mortem* examination, was able to remove the thoracic contents.

The disease seems to have developed in the pleura primarily, and the lung changes were secondary, or, perhaps, the determination

^a Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, April 3, 1891.

towards the pleura was caused by acute inflammatory changes and exudation, while the interstitial inflammation of the lung was simultaneously though more gradually progressing.

A more minute examination of the specimen shows a beautiful contrast between a deep iron blue of the contracted lung, intersected by grey bands, and the glistening white firm covering of the altered pleura. The latter cuts like cartilage. It surrounds the lung in its entirety, and yet cannot be separated from it, and gives the idea, from the want of uniformity in its substance, that it was laid down in concentric layers. The thickest point is over the portions in relation to the lower axillary, mammary, and diaphragmatic regions. It is least at the apex and at the root of the lung.

The lung itself is reduced to about two-thirds of its normal size, and has quite lost its spongy feel and lobular appearance. Its vesicular structure is to a very large extent absent, and some places, notably the upper lobe and part of the lower portion which belongs to the costo-diaphragmatic sulcus, contain one or two small cavities varying in size from a split pea to a French bean, slightly honeycombing the lung, and resembling the inter-columnar spaces of the ventricles of the heart. These cavities, when they do not communicate with each other, seem to be dilatations of a bronchus, as their walls are smooth and covered with epithelium, and in the drawing one such bronchus can be seen ending in the larger cavity below. A number of pigmented and enlarged glands occupy the root of the lung.

Appended is the Report of the microscopical examination, which has been kindly made by H. C. Earl, M.B., F.R.C.P.I., Assistant to the Professor of Physiology, Trinity College, Dublin:—

“Microscopic appearances of Dr. Finny’s Case of Cirrhosis of Lung.

“The pleura and inter-lobular septa are greatly thickened, and the connective tissue forming them is extremely dense. The walls of the alveoli are also much thickened, partly by newly-formed connective tissue, and partly by an infiltration of small round cells. Thus the alveoli are, in many instances, diminished in size or obliterated. Their epithelium has become columnar or cubical, instead of being the flat epithelium normal to these parts. Sections through the walls of the smooth-walled cavities which the lung presented, show that these are lined by an epithelium in the greater part of their extent, but in some parts this epithelium is absent.

The walls of the cavities are infiltrated with small round cells,

and contain a considerable quantity of smooth muscular tissue. They are thus evidently derived from dilated bronchi.

There is extensive obliteration of the arteries, which are filled by organised fibrous tissue. There is nowhere any trace of tubercle."

The left lung was in a state of engorgement and hepatisation, the greater part of the lower lobe being engaged.

The heart was free from valvular disease, and was not hypertrophied. The larger arteries were slightly atheromatous, and a calcareous spiculum lay in the aorta where the left bronchus crossed it. The kidneys were apparently healthy.

CASE.^a—Thomas B., aged forty, a fisherman from Ringsend, was admitted to Sir Patrick Dun's Hospital on Sept. 30, 1890, under the care of my distinguished colleague, Dr. Purser, and was transferred to my charge on Nov. 1st.

His history was that until a month before seeking admission he was healthy, and had followed his occupation without interruption. His habits were temperate, and there was no evidence of syphilis. He then caught cold, had a bad cough with phlegm, and suffered from slight pain in the right side.

On admission he presented all the symptoms and signs of a case of rapidly-advancing consumption. He was pallid and haggard-looking, was very weak and prostrated, had frequent cough with copious mucopurulent expectoration, amounting to 6 or 8 ounces in 24 hours; night sweats; diurnal chills; a fever ranging from 100° in the morning to 102° in the evening, and a pulse of 100–110, small and compressible. The finger-ends were wide and enlarged, with incurved "spoonback" nails. Physical examination showed dulness on percussion over the lower two-thirds of the right side, with a tympanitic note under the clavicle, and particularly well-marked high up in the axilla. Respiratory sounds and fremitus were deficient in the lower part, while above there were bronchial and cavernous respiration, coarse muco-crepitus—almost gurgling on coughing—and cavernous voice sounds. Considerable doubt at first existed as to the cause of the dulness in the lower part—as to whether it was due to fluid or a thickened pleura, but there was no doubt in the minds of all who examined the chest as to the existence of one or more cavities in the apex of the lung. Frequent examinations were made up to about a month before his death, when he became so much improved in general health, &c., as to be considered convalescent, so that no special examination was deemed necessary. The principal changes noticed at that time were great flattening and immobility of the right subclavicular

* From notes supplied by Mr. Winter, Resident Pupil.

region, shrinking in of the whole side without displacement of the heart, and the side measured one inch less than the left. The diagnosis then was a retracted lung with thickened pleura in the lower parts, and cavities in the upper, which were healing and discharging very little pus. Frequent examinations of the sputa for the bacillus of tubercle were made during the months of October and November, but always with negative results, and two tentative doses of $\cdot 001$ and $\cdot 004$ mg. of Koch's lymph were injected in the beginning of December, which were followed by practically no reactions. The heart was not displaced, and both it and the other organs of the body appeared healthy.

As already stated, the condition of this patient at the time of admission, and for six weeks after it, was one to justify a very grave prognosis, owing to the extreme anæmia, fever, and prostration, but improvement gradually set in and he gained in strength, colour, and weight; the fever disappeared, the sputum was reduced to a very moderate quantity, and he seemed to be on the high road to an excellent recovery, when an attack of acute pneumonia, involving the lower lobe of the left lung, after three days' duration, caused his death on December 29, 1890.

I think no apology is needed for entering so fully into the details of physical examination when I call your attention to the almost total absence of any cavity or cavities in the upper part of the lung larger than a good-sized pea or small bean, and to the consequent difficulty of reconciling the signs of a cavity with the anatomical facts before you. Instead of one or more cavities we have a condensed, firm, iron-grey substance which has lost the spongy feel of lung tissue, and which is permeated by a number of white fibrous bands running from the pleura to the root, and a few small spaces communicating with one another and with some of the adjacent bronchioles.

Now, either our powers of clinical diagnosis were altogether at fault, and we mistook the conveyed sounds from the trachea through the condensed lung for sounds emanating in a cavity, or else—and this, without fear of a charge of vanity, I am disposed to adopt as the more probable solution—during the last month of the patient's life, while he was up and about each day, and while no special examination of the apex was made, a contracting process was rapidly going on in the apex of the lung, and the cavities which did exist there, as Dr. Purser and I believed, were thus obliterated.

The specimen is an unusually well-marked one of the conversion of the pleura and lung into dense fibrous tissue, and confirms the view I expressed in 1883 that there are pathologically no sharp

lines of demarcation between fibroid induration of the lung, cirrhosis, and bronchiectasis. It may, indeed, be allowable to speak of the fibroid change, as Charcot does, in relation to its chief points of origin, as pleuro-genetic, pneumo-genetic, and broncho-genetic, but it is a mistake to base a clinical or pathological diagnosis on a theoretical and scholastic definition.

There are many questions and problems of difficulty suggested by this specimen, both clinical and pathological as well as ætiological.

Taking the latter first, one must ask what is it which induced this conversion of a spongy lung into a dense, solid, almost airless mass. There was nothing in the patient's habits of life, age, occupation, place of residence, or climate to induce it. Moreover, there had been no irritant particles inhaled, no tubercular or other deposits present, nor had there been former attacks of pleurisy or pneumonia. In truth, to this question we must reply that there is no answer possible.

The pathological process was one of interstitial pneumonia affecting the interlobular septa, occluding many arterioles and compressing in parts and dilating in parts the lumen of the bronchi and bronchioles, and obliterating many of the alveoli, and altering their epithelial lining. The process was not ulcerative, although, as Dr. Earl points out, some of the smaller cavities in the altered lung were not completely lined by epithelium—a condition not altogether unknown in cases of chronic bronchitis where destructive inflammation may follow upon the retained or pent-up products of mucous inflammation.

The facts of stenosis and bronchiectasis are there, but their explanation is not so self-evident, nor can they be readily or fully accounted for by any of the physical theories usually advanced. These theories largely deal with the resultant dilatation or bronchiectasis, and may be stated to be twofold—first, that put forward by Corrigan, that the contracting medium of interstitial inflammation dilates the tubes by drawing them together to the loss of the inter-tubular tissue, just as a similar process in a single tube as the œsophagus would lead to stricture. This traction from without is supposed to be best marked in those cases where the pleura costalis and p. pulmonalis are intimately adherent, and from which fibrous bands are traceable into the lung for varying distances, and, as Hamilton states, the rigid chest-wall is the point towards which the contracting force draws, and this constitutes the chief factor in the production of bronchiectasis.

If ever a test case existed where such a theory might be expected to be verified it certainly was this one—as the thickened pleura formed a rigid wall, fibrous bands traversed the vesicular tissue, starting from or connected with this rigid envelope, and yet dilatation of the bronchioles was the least prominent feature of the pathological changes.

The other view which Stokes advocated, and which received the support of Rokitansky, and in part of Barth and Lebert, may be stated to be that the dilatation of the tube was the result of the morbid change consecutive to a localised collapse of the air vesicles and lung tissue which was primary, and which was due to imperfect ingress of air at each act of inspiration in the course of bronchitis.

It must, however, be conceded that cases occur which do not conform to either of these theories, and I believe neither alone nor in combination with each other do they explain the various conditions seen in a lung the seat of chronic interstitial inflammation. Nor will they be met by the additional theory of Lebert, that disturbed innervation of the bronchial walls rather than inflammation aids their dilatation.

Why the diseased conditions are in some instances limited to a lobe or part of a lobe, while in others they extend to the whole of one lung? Why in some the pleura is deeply involved, in others very slightly affected? Why in some the bronchial dilatations are so great as to convert the lobe into a honeycombed mass of fleshy tissue (as in my case of 1883, already referred to), in others so slight as hardly to be the prominent feature in the general condensation? These are questions for which satisfactory answers cannot be found.

Lastly, from a clinical point of view, our difficulties are by no means removed. If we except the presence or absence of the bacilli of tubercle in the expectoration, we have no conclusively distinct group of symptoms or signs—as Dr. Stokes laid stress upon—to diagnose cirrhosis from tubercular phthisis.

The family history—so far as heredity of disease is concerned—and the long continuance of ill-health and of unilateral lung disease, will doubtless do much to aid the diagnosis; but clinical observation, except extended over many weeks, fails as a diagnostic in instances of short illness such as in the case the subject of this communication

A similarly rapid course is recorded by Charcot in a man aged sixty-one, whose illness began with rigors and pain in the side and



F. Huth, Lith^r Edin^r

D^r Finny on Cirrhosis of the right Lung.

with rusty sputa. Death occurred in three months and a half subsequently, and, very like my case, the right lung was found to be hard as cartilage, shrunken to two-thirds of its natural size, and enveloped in an immense fibrous mass.

Passing, however, from the consideration of these difficult problems, may we not learn from such cases lessons hitherto unheeded or overlooked as to—(1) the rapid outpouring of fibrin in large quantities into the pleural cavity in some cases of pleuropneumonia, analogous to the enormous and equally rapid infiltration of the alveoli of a lung in the early stages of acute croupous pneumonia; and that (2) the process of contractile pressure in the case of a soft non-resistant substance like the lung, may go on painlessly and rapidly, and even close up and cure in the space of a few weeks any cavities which may have previously existed, or occurred earlier in the course of the disease as the result of ulcerative bronchitis.

Possibly we are justified in assuming the cirrhotic process may run a more rapid course in cases like mine, and that described by Charcot, where pleurisy was a primary factor, and the lung was compressed by effusion of a highly fibrinogenous fluid. For we can conceive that interstitial inflammation and consequent contraction in such circumstances would then have little to contend against as regards either air or blood pressure, and would rapidly increase the retraction of the pulmonary parenchyma in an upward direction towards the root or other more fixed portions of the lung.

May not this very facility of contraction have at first induced, though it finally cured, the bronchial inflammation in the upper lobe by compressing the bronchioles leading from it, and thereby retaining the mucous discharges? These, in their turn, became infected by septic matters, and caused ulceration and cavities.

This septic decomposition and purulent change then induced the hectic fever and pyæmic cachexia from which my patient suffered through the months of October and November, but as these foci of infection were more and more reduced in size by the ever-advancing contraction, the general condition of the patient improved, the fever, prostration, and anæmia diminished *pari passu* with the reduction in the amount of purulent expectoration, and were it not that life was cut short by an intercurrent attack of ordinary (not septic) croupous pneumonia in the left or healthy lung, which was very prevalent in Dublin at the time, it were more

than probable that a complete retraction and contraction of the lung would have been perfected, and life maintained for many years.

ART. XIII.—*Notes on the Pathology of a Dentigerous Cyst.*^a By ARTHUR W. W. BAKER, M.D., F.R.C.S.I.; University Examiner in Dental Surgery, Trinity College, Dublin.

UNDER the term dentigerous cyst are grouped, according to Heath,^b two very distinct affections—the one due to the retention of an unerupted tooth within the substance of the jaw; the other the result of changes induced by inflammation in the root membrane of a tooth whose eruption is already complete. As this classification has been accepted by most writers on dental pathology, it is not my intention on the present occasion to dispute its correctness.

The case that I wish to bring under the notice of this Section belongs to the second group of these tumours, and is one that possesses a purely pathological interest. My reason for bringing it forward here is that it presents some histological features which, as far as I am aware, have not been hitherto described.

I am indebted to my colleague, Mr. Yeates, of the Dental Hospital of Ireland, for the specimen which forms the subject of this communication; it is from a case which we saw together in consultation.

The notes of the case are briefly as follows:—The patient, a gentleman of about twenty-five years of age, suffered a good deal from pain of a neuralgic character, which was referred to a left upper molar. The pain was present most of the day, and was relieved towards evening, apparently by food and stimulants. We concluded that the pain was most likely due to some form of pulp irritation, there being an absence of all signs which would indicate the root being involved. It was consequently decided to remove the filling that was in the tooth, for the purpose of treating the pulp; to our surprise the pulp was found to be dead, and on clearing away the remains of the pulp a gush of fluid, apparently purulent, came from one of the roots; the subsequent examination of the tooth showed it must have come from the palatine root.

^a Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, December 5, 1890.

^b *Injuries and Diseases of the Jaw.* Heath. 3rd edition.

The patient being still unrelieved, he requested the removal of the tooth, which was accordingly done under gas.

A few days afterwards I examined the tooth, which had been placed in spirit at once on removal; it was a left upper first molar, with a cavity involving the coronal and distal surfaces. Two small spherical tumours were attached to the palatine and posterior buccal roots respectively; that on the palatine root being the size of a pea, while the tumour on the buccal root was somewhat smaller. Under the microscope the tumour of the posterior buccal root exhibited the usual structure of these growths—viz., an outer thicker layer of fibrous tissue, with elongated cells, evidently derived from the root membrane, a middle layer consisting of rounded nucleated cells arranged in irregular rows with a felted arrangement of fibres between; an internal layer of granulation tissue, in which some thin-walled blood vessels were to be seen; and in the centre of the granulation tissue a cavity which contained a small quantity of pus—this latter dropped out in the manipulation of the section. I may add that none of the sections of this little tumour exhibited epithelium.

The growth on the apex of the palatine root was about the size of a pea. I removed it, together with a small portion of the root, and decalcified it with picric and nitric acids. On examination I found that the tumour was a cyst, the outer wall of which consisted of fibrous connective tissue, with elongated cells, and, as in the previous case, was evidently derived from the root-membrane, with which it was continuous, the apex of the root being denuded of its proper covering, its place being taken by granulation tissue. Next came a middle layer, with a few bundles of fibres, between which were irregular masses of round nucleated cells, while more internally was a layer of granulation tissue, with some thin-walled vessels.

On the granulation tissue stood a double row of columnar ciliated epithelium, which in some places had separated slightly from the granulation tissue in cutting the section.

The epithelial layer lined throughout its greater extent the principal cavity of the cyst, as well as some diverticula in direct connection with the principal cavity, and some loculi outside it.

The interest in this case naturally centres round the presence of ciliated epithelium in such a position. Flat or spherical epithelium I have frequently found in examining sections of root membrane,

and it is described by Magitot,^a Malassez,^b Rothmann,^c and other writers, as occurring in the situation. But at first sight it seems a little difficult to account for the presence of columnar epithelium in a position remote from the respiratory tract and those other places where it is usually found; still, if we remember the way in which ciliated epithelium is regenerated, its presence in my case will not be quite so obscure. It is a well-known experiment^d that when the ciliated epithelium is artificially removed from a portion of the inner surface of a rabbit's trachea, the denuded surface speedily becomes again covered with epithelium, which grows over it from the edge, but the cells form at first a single layer of flattened epithelium, they next acquire cilia, and afterwards become columnar, the epithelium thus assuming the character which it has normally in that situation. If such transformations are possible, there is no reason why the epithelium, to which I have already referred as frequently present in the root membrane, should not under suitable conditions become changed into columnar ciliated.

Cysts such as I have described are not generally credited with an epithelial lining, and the only case that I can find that at all bears on the one I have brought forward is related by Dr. Rothmann in his work on diseases of the pulp and root membrane, where he says, in speaking of the histological appearances of a case of chronic granulomatous periodontitis, "that in addition to the already-described formed elements on the outer surface of the apical portion, was a covering layer of cylindrical epithelium, which, with an amplification of 460 diameters, showed cilia lying very clearly visible." Now, on comparing Dr. Rothmann's excellent illustrations, with some of my sections, I think it most likely that he wrote his remarks as to the position of the epithelial layer from an examination of a section taken from one side of the specimen, which would give exactly the appearance he has depicted, whereas if he had taken a section from the centre it would, in all probability, have shown it to be a cyst like the one I have described. I am the more inclined to this opinion, as I think it extremely unlikely that ciliated epithelium could exist as the outer layer of such a growth. The presence of cilia would, to my mind, necessitate the existence

^a Mémoires sur les Tumeurs du Perioste Dentaire. 1873.

^b On the Existence of Masses of Epithelium round the Roots of Adult Teeth, in a Normal State. Journal of the Brit. Dent. Association. 1885.

^c Patho-histologie der Zahnpulpa und Wurtzelhaut. 1889.

^d Quain. Elements of Anatomy. 9th Ed. 1882.



FIG. 1.

A End of root.

B Granulation Tissue.

C Columnar ciliated epithelium.

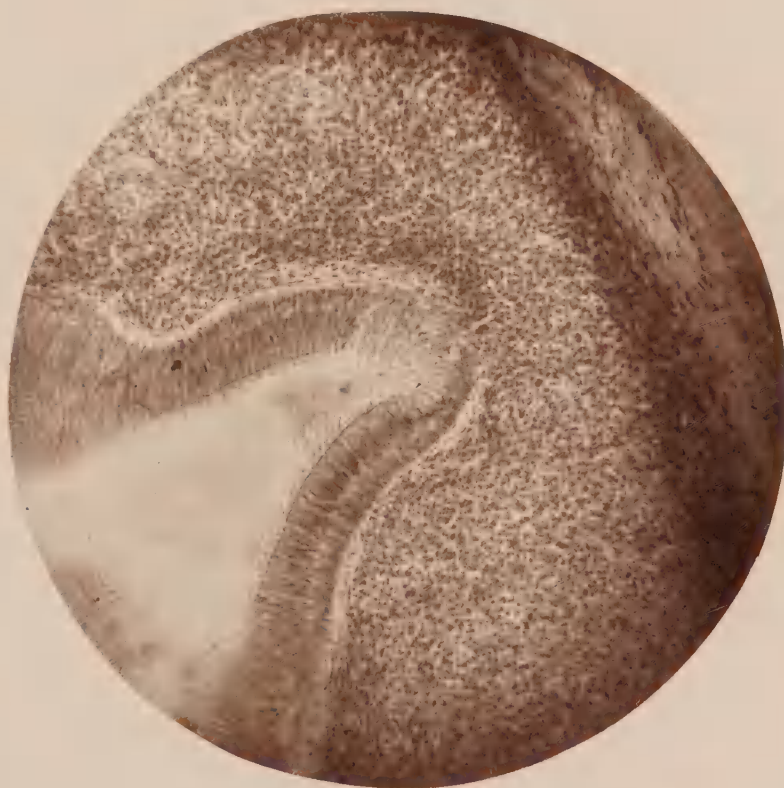


FIG. 2.

High power view of portion marked **F** Fig. 1.

of a cavity in which they would be free to perform their usual function of vibration. Also in my case, where the columnar cells pass into the outer wall of the cyst, they become altered in appearance and lose their cilia.

In conclusion, I think this case is of interest as bearing upon the possible ætiology of multilocular cystic tumours. The presence of epithelium in the root membrane of teeth would account for these cases as well as the special ingrowths of oral epithelium, which Mr. Eve^a considers as the usual manner in which they arise, and to which I can also testify from my own observations on gum polypi,^b where comparatively trivial irritation produced a considerable proliferation of the epithelial layer of the gum.

The photo-micrographs which accompany this communication were made by me from my sections. Fig. 1 shows a general view of the cyst under a low power (Leitz, No. 1), in its relations to the root and the expansion of the root membrane, so as to form its outer layer, also the distribution of the epithelial layer as a lining membrane to the main body of the cyst and its diverticula. Fig. 2 is the portion marked in *f* Fig. 1 under a higher power (Leitz, No. 5), showing the double row of columnar epithelium with cilia.

ART. XIV.—*Septic Phlebitis*.^c By R. F. TOBIN, F.R.C.S.I.;
Surgeon to St. Vincent's Hospital.

THE case to the pathological aspect of which I ask leave to direct the attention of the Academy in this paper is the following:—

CASE.—C., a tramdriver, aged thirty-five, was admitted into St. Vincent's Hospital on 9th Feb., suffering from large varicose veins on inner aspect of left leg. There was nothing particular either in his family or previous history. His complexion was sallow; his general health fair. Two superficial ulcers, one about the size of a sixpence, the other about half that size, were to be seen two inches above the left inner ankle. I excised an inch of one of the enlarged veins at a point corresponding to the inner margin of the centre of the tibia, and did a similar operation on the long saphenous vein immediately above the inner condyle of the femur. The fullest antiseptic precautions were adopted as regards the parts operated on; the ulcers were washed

^a Eve. Lectures on Cystic Tumours of the Jaws. British Medical Journal. 1883.

^b Baker. Polypus of the Gums. Journal of the British Dental Association. 1890.

^c Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, April 3, 1891.

with carbolic lotion 1 in 20, dusted with iodoform, and included with the wounds under a Lister's dressing. The parts were looked at on the fourth day after the operation. The incisions were healing by first intention. A small red streak was noticed extending upwards for an inch or so from one of the ulcers. The temperature in the interval since the operation had not risen above 99.5° . Three days later the parts were again inspected—the streak referred to had now reached the lower wound which was inclined to open, and on being pressed yielded a little muddy serum. The inflammatory process could also be seen extending upwards in veins lateral to the wound, but the vein operated on was on its proximal side quite intact.

The last recorded temperature was 100° . When I came to hospital on the following day I was told that the patient had had a rigor, with a marked rise of temperature, the evening before; and again next day the same story was repeated. On this, the ninth day after operation, his condition may be thus described:—His temperature was 101.5° —it had been 104.5° the evening before. He had had two distinct rigors; he had total loss of appetite, and had not slept at all for two nights. The tongue was dry, and brown in the centre; the yellowness of his complexion had increased. Practically all the superficial veins on the inner aspect of the left leg were much swollen and inflamed, and in the thigh the long saphenous vein was affected for some three inches, the disease reaching it through a lateral branch, and then travelling downward to the upper wound, causing it—which had previously healed—to break down into a dirty unhealthy sore. It was plain that the patient must die, unless the progress of the disease were stopped. Why I had not interfered earlier I do not know, unless it was from that too common belief that the impossible will happen in one's own cases.

Having placed a ligature on the long saphenous vein, a few inches above the point where the inflammation had reached, I carried an incision from this point downwards to the ulcers near the ankle, and having reflected flaps of skin, so as to lay bare the leg through half its circumference, I removed every diseased vein, following it till an apparently sound point had been reached. Luckily this was possible in every instance before a junction with a deep vein had been made. With the original ulcers I used a Paquelin's cautery. The parts were well washed with a 5 per cent. solution of carbolic acid, and the flaps of skin were put in their places in a temporary fashion.

The subsequent history of the case is satisfactory. At only one small point was it found that the operation had been incomplete, and that it was necessary to make a further clearance. No further rigor occurred. The wound took on a healthy action and healed rapidly, notwithstanding that for the first three days after the operation the skin-flaps were thrown back each morning, and the exposed parts freely irrigated.

Although, as I have already said, he had no rigor subsequent to the operation, the constitutional disturbance was slow in subsiding, showing, I think, that secondary centres of infection had formed during the period of delayed interference. For a week after the operation the temperature ranged between 101° and 104° ; then it began to fall in the morning, rising towards evening, and it was not till a month after the operation that it became normal, and that the patient's condition became in every way satisfactory. He is now able to be up and about, but he has all the appearance of a man who has gone through a very severe illness.

In looking back upon this case, with a view to gather whatever instruction it can yield, I would like to do so with light thrown upon it from Ogston's "Report on Micro-Organisms in Surgical Diseases," *British Medical Journal*, 12th March, 1881, and from his article on "Micrococcus Poisoning" in the *Journal of Anatomy and Physiology*, July and Oct., 1882, for although the lessons therein taught have been before us for ten years, and experience has proved their truth, the profession at large have, it seems to me, not taken them to heart as closely as their importance demands.

The first point illustrated by the case before us is, that a perfectly aseptic operation may be the means of exciting acute sepsis—that is, it may be innocent of the introduction of germs, but by producing a medium in which such irritants can freely grow, it may be deadly in its results. In the present instance the starting point of infection was an ulcer that would have altogether escaped notice if it had not been on the surface. In it cocci had lived and multiplied, after a cramped and comparatively harmless fashion, previous to the operation. No doubt a few of them had occasionally found their way into the blood stream, and having sickened or died in that more or less antiseptic fluid, had been eliminated. But how completely all was changed as soon as the venous clot resulting from operation had given them a medium in which they could grow apace, and in detached portions of which they could wander afar.

How we should treat such centres of infection as the foregoing when they are recognised and are within reach we can learn from Ogston's observations. He found that when "once micrococci have gained access to a wound it is not easy to eradicate them." Ordinary Lister's dressings will not do so. After weeks of dressing with carbolic lotion (3 cases), carbolic oil 1:16–1:8 in strength (8 cases), after the use of dressings of boracic lint (4 cases), salicylic acid (1 case), and chloralum (1 case)—all carefully and

thoroughly applied—they were found in the wounds and ulcers in nearly as great numbers as ever, and it was clear that these applications as ordinarily employed, although generally sufficient to kill bacteria and bacilli, are powerless to eradicate the micrococci. The only way in which I succeeded in destroying them in wounds was by cauterisation with strong solution of chloride of zinc, or by strong friction with 5 per cent. solution of carbolic acid.” In the present instance carbolic lotion was used, but only superficially, it was not scrubbed into the ulcers.

The next point is one worthy of consideration, for on the view we take of it depends our action in critical cases. I shall put it thus:—If secondary centres of infection have formed is there any use in interfering with the primary one? If the case is one of progressive sepsis will not that process go on unless all its foci are removed?

Ogston has clearly shown that the severity of septic disturbance varies with the number of organisms introduced, as well as with the degree of their virulence, also that, where “pyogenic organisms are exposed to the air they do not reproduce themselves with the rapidity necessary for the exhibition of their noxious influences.” When he injected pus from acute abscesses it almost invariably produced serious effects, while the injection of an equal quantity of pus from the surface of a wound was, as a rule, trivial in its consequences. His cultivation experiments taught a similar lesson. He altogether failed to grow thoroughly active pyogenic cocci till, by placing them in an egg, he excluded them from the action of the air.

Applying these observations to the question now propounded, we may, I think, say unhesitatingly, that they warrant us in being as active and thorough as possible in removing the primary focus of disease, whether secondary foci have occurred or not. Nay, I will go further and say, that we may do so even hopefully, provided our action is sufficiently thorough, and the number of new foci formed is but a few. My reason for this opinion is in part experience and partly some observations, which I give with diffidence, for I know not if they will coincide with yours, and if they do not, I have no authorities on which I can fall back.

In such *post-mortem* examinations as I have seen made in cases of pyæmia it appeared to me, judging, I regret to say, altogether by macroscopic appearances, that the destructive processes going on in pulmonary infarcts were not as active or extensive as those in the starting point, or in other centres existing elsewhere. In

using the word extensive I refer, of course, only to the size of the individual foci.

In forming a judgment on this point one should bear in mind that at the outset the lungs have to bear the whole brunt of the battle. In them is lodged every shot that's fired. We, therefore, after the action find in them plenty of bullets, but remembering that the abscesses which these bullets excite are antecedent to such as exist in other organs, I say that from their size and appearance one would be inclined to say that pyogenic cocci do not multiply in the lungs quite as readily as they do in many other places. As to why this should be I can, of course, but speculate. I can but ask, does their great vascularity favour phagocytosis, or has the air in the surrounding vesicles any action on their growth. Such questions, however, are vain till the primary one—have, or have not the lungs a restraining influence on the growth of septic organisms?—is answered. If they have, as I am inclined to think, then I say here is new reason for uprooting without delay, and at all risks, the primary centre of disease.

But perhaps some one may say, "You are beating a dead horse. No one doubts the advisableness of such treatment." On looking to see what Erichsen has to say on this subject I find the following:—"In spreading septic phlebitis, treatment is of little avail. If a superficial vein is affected it would be justifiable to expose the vein above the affected part, and remove a portion of it to arrest the progress of the disease." The uselessness of such a proceeding could not be better illustrated than by the present case, where the continuity of the vein in which the septic thrombus first formed was interrupted at two points previous to the onset of the disease.

No, I am convinced that in practice, at least, some of us are not as active as we ought to be in the applications of radical measures to every septic growth that is in any way within our reach. For myself, I can look back on many cases in which I have so failed. We are not afraid of non-pathogenic organisms—we clear out and drain every place in which they show themselves—but when we are face to face with an infective process we are inclined to act as if we thought that the morbid process was in the blood, and was therefore beyond our reach. It is on this account that I have brought this question before this Section of the Academy, and that for the guidance of operating surgeons I ask you do you agree with this dictum of Ogston's, as far as it concerns septic diseases:—"The phenomena of ordinary zymotic disease are inexplicable on

the supposition of the morbid cause having its citadel in the blood, but can be readily understood if the tissues be the intrenchments which they occupy, and the blood merely a province where a guerilla warfare is carried on."

ART. XV.—*Massage as applied to the Treatment of Incontinence of Urine in Females.*^a By WILLIAM S. BAGOT, M.B., L.M.; late Senior Assistant Physician to the Rotunda Hospital.

THE subject which I wish to bring before your notice is the treatment by massage of incontinence of urine in females.

Massage, as applied to gynæcology, though for many years recognised on the Continent as a very valuable method of treatment, has till quite lately had a most vigorous opposition offered to its introduction in our sister island. In this country, also, a feeble outcry against its use is being raised by one or two of those who belong to a class which denounces and has ever denounced every reform and innovation not emanating from themselves. Now, however, owing to the numerous cures which have been brought about by this method, some of the English gynæcologists have at last been compelled to recognise that it is at least an agent of no little therapeutic value. I do not intend to offer any apology for having adopted this method of treatment, believing, as I do, that those who have from time to time qualified the practice of massage in gynæcology as indelicate or disgraceful, are quite ignorant of the technique of the method or its value. Opposition has ever been made on similar grounds to every innovation in gynæcological exploration except laparotomy. How great, for example, was the opposition offered to the introduction of the speculum, the dorsal position during vaginal examination, &c.! For a moment let me recall to your minds the writings of Lee on "The Speculum," where he fiercely denounces its use. Yet now, as we read those urgent appeals of his, we smile; for the speculum has become one of the most valuable instruments in the gynæcologist's armamentarium. So, too, in the future we may hope that the futile attempts of those who try to throw discredit on gynæcological massage, with grandiloquent appeals conjuring up vain phantoms of evil resulting from its practice, may prove a useful lesson to others, preventing

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, February 13, 1891. [For the discussion on this paper see Vol. XCI., page 346.]

them from opposing any scientific innovation except on truly sound and scientific grounds.

Gynæcology is a necessity, and is to be treated as such. Its practices are only justifiable owing to the results secured by them. It is then not a question of delicacy or indelicacy, for all gynæcological exploration would be indelicate were it not for these results. I trust, therefore, that such terms may be absent from all discussion in a scientific association such as the Royal Academy of Medicine.

Massage in the treatment of enuresis is by no means of recent introduction, having been used by Thure Brandt for some years past.

It is, however, only a little more than a year since that his method of treatment for this affection was brought under my notice, and having tried Brandt's system of massage successfully in other diseases of the female pelvic organs for some years previously, I gladly adopted this also, for I had often, in the treatment of this affection, found all measures, such as electricity, &c., to be of little use, or at least very tedious. That some of the steps in Brandt's system are unnecessary, if not useless, I acknowledge. We know that it is usually the tendency with specialists to make their methods and instruments special, and especially numerous. Do we not hear of gynæcologists who vie with one another in daily inventing instruments till the gynæcological armamentarium contains curiosities which imitate in appearance almost every article of household ironmongery, from the egg-whisk in the kitchen to the piano candle-bracket in the drawingroom? Surely we cannot expect a specialist in massage to be more infallible than others. Though, as I have said, some of the steps in Thure Brandt's method of treatment are probably excessive, if not useless, still these are not many. I will, therefore, first give his method in full detail, afterwards calling attention to the parts which I omit in carrying it out. The following are the steps:—

1st. Tapotement of the lumbar and sacral regions. The patient stands with the feet together, leaning slightly forward and supporting herself by placing her outstretched hands against a wall or other firm object. A rapid but springy percussion is then made with the closed fist down both sides of the spine, beginning at the lumbar region and passing downwards over the buttocks, after which the open hand is stroked firmly downwards over the same regions three or four times.

2nd. The patient lies on a low couch as in the dorsal position for vaginal examination. The operator stands in front of the

patient, with his right foot on the ground and his left knee on the couch; then bending over the patient, he extends his arms and lays his hands, with the ulnar surface approximated, and the finger-tips directed towards the pubes, on the woman's abdomen in the hypogastrium. Now, sinking his fingers deeply into that region by the sides of the bladder as if to grasp it, he makes a vibratory movement with each hand alternately, as though he were about to elevate that viscus out of the pelvis. This is repeated three times.

3rd. The index finger of the left hand is introduced into the vagina, slightly flexed and passed obliquely so as to partially encircle the neck of the bladder. The right hand now grasps the wrist so as to more accurately regulate the pressure used, and the finger in the vagina is made to vibrate against the neck of the bladder, compressing it moderately forcibly against the pubes. This being done three or four times, the opposite side of the bladder is treated in a similar manner with the index finger of the right hand.

4th. The exercise of the adductors of the thigh. The patient, still lying on her back, brings her knees and heels closely together, and raising her pelvis off the couch, supports herself on her shoulders and feet. The operator then places his hands on the inner surfaces of her knees and gradually forces them apart as far as possible, while she resists the movement. She now closes them while he resists. This is done four or five times, after which the tapotement of the lumbar and sacral regions is again performed. In children the neck of the bladder is treated as in step 3, but per rectum instead of per vaginam.

Though I have used this method successfully in three cases, I have unfortunately kept detailed notes in one only:—

CASE.—M. F., aged thirty years; married $8\frac{1}{2}$ years, 5 children; $1\frac{1}{2}$ years since last pregnancy; states that she has suffered from incontinence of urine more or less since her last confinement, but she has become much worse during the past nine months, her water passing from her involuntarily, whenever she walks about or makes any sudden effort, such as coughing, &c., and that she frequently passes her urine under her when asleep in bed, especially after having had sexual intercourse. She was in appearance a fairly healthy, rather stout woman. Her bowels were constipated, moving once or twice a week. Examination showed a slight perinæal laceration of first degree, a rather patulous urethra, slight prolapse of anterior vaginal wall. The vagina and perinæum were

abnormally distensible. The urine was normal, and on passing a sound no abnormal tenderness or irritability of either the urethra or bladder could be found. The uterus and appendages were normal.

She was treated once daily for four days by Brandt's system, omitting step No. 2, "the lifting of the bladder." The bowels were regulated so as to secure a daily motion by the use of *mist. ferri sulph.* (Rotunda Hosp. Formula). She was told to wear woollen drawers and to try to practice holding her water whenever she felt it about to pass from her. She, at the end of this time, stated that she could hold water much better during the day; it now came away only during a very sudden or powerful effort. But at night her condition was the same as before treatment was commenced.

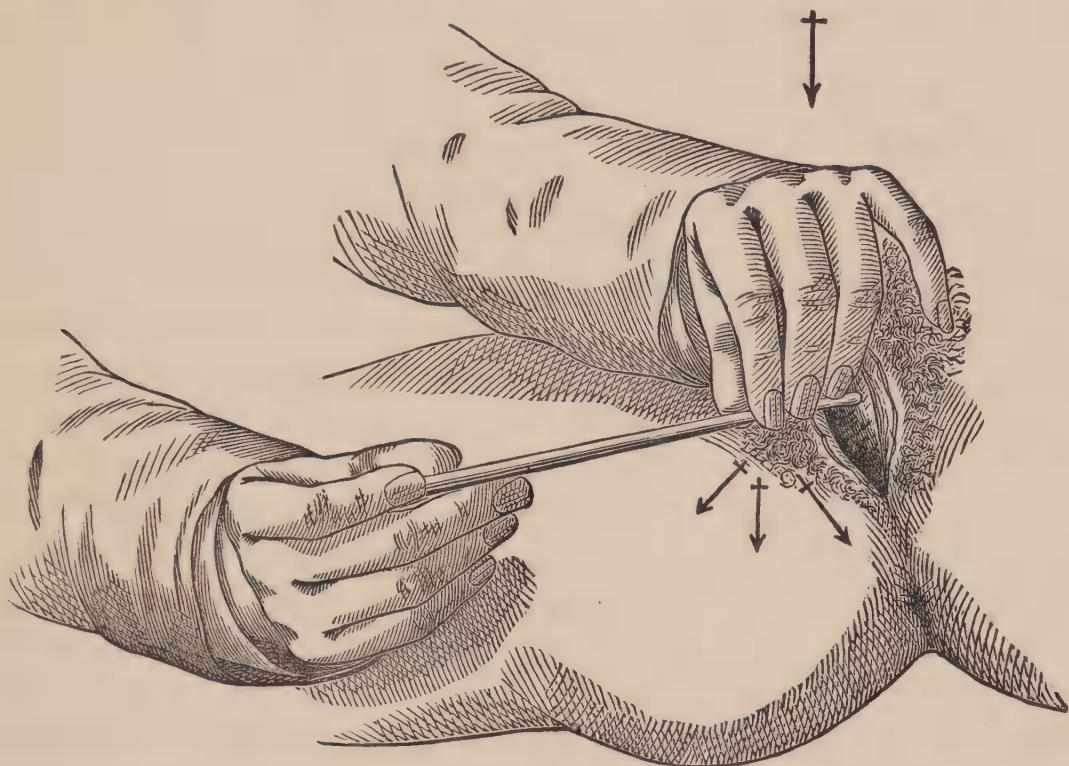
Massage was continued every two days for eight days, after which she could hold her water almost as well as ever in the daytime. During the past two days it had passed from her involuntarily only once; but she had passed urine in her bed on the previous night. I continued to treat her every second day for four days, during which time she passed urine involuntarily only once during the daytime and not at all during the night. She then came every second day for three more visits, and during this time she felt quite well, except that she once passed urine involuntarily in her bed. The treatment was still continued every second day for four days, and afterwards every third day for a week. During this she had complete control over her bladder, and, as she stated that she felt quite well, she was discharged, being told to come back if the disease returned. It is now nine months since she was last treated, and when I last heard about her, three months ago, she still continued well.

Of the other two cases treated by this method, one was a young woman in her twenty-fourth year, unmarried, and well developed. On examination nothing abnormal could be found beyond catarrh of the endo-cervical mucous membrane, which I treated with pyroligneous acid. She had suffered since a child from nocturnal enuresis. About two years previous to this she had been treated with electricity every second day for six weeks, but without success. She was now treated by Brandt's system, omitting "the bladder lifting" and "the exercises for the adductors," every second day for five weeks, at the end of which she thought herself cured, and was discharged, being told to return if she did not feel well. She has not returned, twelve months having elapsed since I last saw her. The other was a woman aged about forty years, married twenty years; ten children; no abortions; had always easy labours; one year since last pregnancy. She complained of "partial incontinence" of urine. For the past three years her water used to

come away from her involuntarily when she was walking. On some days she would be better than on others; but there would always be some degree of incontinence. She was treated for a week regularly every day, and then for three weeks, sometimes every second and sometimes every third day. At the end of this time she was discharged cured. In this case I omitted the "bladder lifting" during the first week and afterwards the "tapotement of the lumbar and sacral regions," and the "exercises for the adductors" were also abandoned. My reasons for omitting the "bladder lifting" altogether is because from what I have observed during laparotomies, I know that it would be impossible to seize hold of the bladder when in an empty state and elevate it by the manœuvre described by Brandt; and on the other hand, were the bladder full or even partially filled, anyone who has any experience in abdominal palpation must recognise that such a procedure could not be carried out owing to the sensitiveness of that organ. Both Brandt and Boldt have reported numerous successful cases treated by this method. A lady, who had been treated by "some of the most eminent German specialists" by dilatation of the urethra, electricity, &c., aged thirty-two years, married nine years, came to Brandt stating that for the past six years she was utterly unable to retain her water the moment she was on her feet. After eight days' treatment she was discharged cured. Boldt also reports successes in the cases of two children, aged nine years, after treatment lasting three weeks. Before passing from this method I would say that though I used the tapotement of the lumbar and sacral regions in the cases which I treated, I fail to see how it can be in any way beneficial; and as I have long since given it up as unnecessary in the manual treatment of uterine displacements, so, too, in the future I would discard it in the treatment of this affection. The exercises of the adductors of the thighs is undoubtedly useful in those cases where the floor of the pelvis is greatly relaxed; yet even in these, though it may be and probably is of use to brace up the parts, it is not by any means an absolute essential in the cure either of enuresis or of uterine displacements. The chief part of this method as applied to the cure of incontinence of urine is the direct treatment of the neck of the bladder.

There is another method of treatment for this affection to which I wish more particularly to direct your attention—a method which, though, as far as I know, not classed under the term massage by its originator, Dr. Sänger, may practically be included under that

heading. When I was in Leipzig Dr. Sanger kindly demonstrated his method to me and showed me a patient under treatment. It consists in dilating the vesical sphincter as follows:—The patient lies in the dorsal position as for vaginal examination. The urethra is disinfected, and a metal female catheter is passed into the bladder for a distance varying from 5-7 cm., so that its point is on a level



(After Sanger.)

with the orifices of the ureters. The tip of the right index finger being kept on the mouth of the catheter prevents the urine from flowing off, while the index and middle fingers of the same hand steady the instrument. Now, with the index and middle fingers of the left hand placed upon the catheter close to the urethral orifice, the operator makes a springy and forcible pressure, at first downwards and then towards both sides alternately, so that the urethra becomes during these movements widely open and the urine flows out alongside the catheter. Thus not only the sphincter of the bladder, but also the muscularis of the urethra becomes strongly stretched. Further massage of the parts can also be performed by a finger in the vagina or rectum exerting pressure against the catheter. In children a small sound can be used instead of a catheter. The stretchings are not very painful, but in very sensitive people the urethra can be brushed beforehand with a 10 per cent. solution of cocain. More than 10 or 12 sances are rarely

necessary—at first twice a day and afterwards once every second day. In all eight to twelve stretchings are made in the three directions at each sitting. The patient is instructed to try to practise exercising control over the sphincter vesicæ, to abstain from fluids as much as possible, and to keep her abdomen warm. She is also told to write down how often she passes water in the day. Sängér says that the basis and cause of the affection is apparently a weakness or paresis of the sphincter muscle of the bladder, perhaps also a certain tenuity of its muscle fibres. The centre for micturition, he states, must also be implicated, but in a negative direction. The effect of the procedure apparently depends on the fact that the sphincter, through the irritation of the stretching, will be brought in a reflex manner to contract more strongly; perhaps, too, on the fact that a certain degree of work hypertrophy is set up. Hence it follows, according to Sängér, that this stretching of the sphincter can be used advantageously in other cases also of paresis of the bladder depending on peripheral and indeed also on central causes. But he believes that his method is not indicated where there is an abnormal dilatation of the neck of the bladder and the whole urethra existing with incontinence. In these cases artificial narrowing of the urethra by some operative procedure, such as B. S. Schultze's, Pawlik's, &c., is more likely to succeed. When, however, the dilatation is not so great the method of Sängér should be tried. By this method I have treated two cases—one, a woman aged forty years, married fifteen years, has had two children but no abortions; eleven and a half years since last pregnancy. She had suffered from an almost complete prolapse of the uterus, which I cured by Brandt's method for that affection, omitting all steps but the "lifting" and "massage of the ligaments." She also suffered from enuresis, which I thought probably depended on the prolapse. I therefore treated the uterus and its ligaments only, and waited to see what effect it might have on the incontinence of urine. She had suffered from a retroflexion of the uterus for over two years previous to this, and had worn a Hodge pessary for two months, after which she would wear it no longer, for some reason which she refused to explain. When she came to me her uterus had been down outside the vulva for a week past. Examination of the genitals showed perinæum intact; the uterus projected beyond the vulva for a distance of 9 cm.; great ectropion; hypertrophy both of the supra and vaginal portions. The cavity of the uterus measured 13.5 cm. The fundus was enlarged and retroflexed.

There was a cystocele but no rectocele; the endometrium was unhealthy and bled easily. The uterine appendages were displaced, but otherwise normal to the touch. Her urine was normal—sp. gr. 1022.

The patient not being able to attend more frequently, massage was performed every second or third day from May 6th, 1890, till May 20th, 1890, when the uterus remained in its normal position. I then put in a watch-spring or rubber ring pessary, No. 95, as the treatment was not completed and I was going away on my vacation. She returned to me on July 11th, 1890. The uterus was then in normal position; its cavity measured 9 cm. She stated that her urine still came away involuntarily when she walked about and also in bed when asleep. I tried Sängers' treatment once daily for a week, then twice a week till August 1st, 1890, when she stated that she had complete control over her bladder. There has been no relapse since. The second case was a woman, aged forty-three years, married twenty years, who had two children, fifteen years having elapsed since her last pregnancy. On examination a perinæal laceration of second degree, slight parametritis sinistra chronica, with sinistro-position of the uterus, were the only abnormalities discovered. The urine was normal. She stated that since the birth of her first child, a difficult forceps delivery, she had always suffered more or less from incontinence of urine when walking about. She was treated once daily by Sängers' method for ten days, then every alternate day for a fortnight, and afterwards once a week for another fortnight, when she said she would come no more, as she felt quite well. She left off treatment on October 11th, 1890, since which, as far as I know, there has been no return of the disease. There is still another method of treatment which often proves extremely valuable when applied to suitable cases—I refer to massage by distension of the bladder with warm water—a method to which attention has been drawn by Braxton Hicks, Nissen, and Marion Sims (junior). It is of use in cases of contraction of the bladder following long-continued incontinence, as a result of which the holding capacity of the bladder is much diminished. This condition is especially to be seen where fistulæ have existed, or where patients had previously suffered from severe cystitis of long standing. A stream of warm water or some antiseptic solution is injected into the bladder by means of either a Higginson's syringe or a siphon irrigator, through a glass female catheter, or through Kuestner's irrigation apparatus, till the patient

complains of pain; then the flow is stopped for a little while, after which more is allowed to enter. The patient is now permitted to empty her bladder, after which the distension is again performed. This is done three or four times, and the treatment is carried out daily.

While recommending these methods, I need hardly observe that a most careful diagnosis must be essayed in every case, special attention being paid to the examination of the urine, and the condition of the vesical and urethral mucous membranes. One should also carefully examine all the other pelvic organs, and inquire closely into all previous treatment lest any traumatic lesion, such as too extensive dilatation of the urethra, might be the cause of the affection. *Fistulæ*, of course, must also be borne in mind. As an instance of what I have stated regarding the mal-application of methods of treatment, I may mention a case where a surgeon dilated a woman's urethra to remove a stone. The urethra was ruptured into the vagina for a considerable extent, and the sphincter dilated till its incompetency was completely assured, after which electricity was had recourse to in order to cure the condition, needless to say, without success. When she came under our notice at the Rotunda Hospital, the whole of the anterior portion of the urethra was gone, having evidently sloughed away. Since then her urethra has been repaired, but, unfortunately, the musculature of both it and the sphincter vesicæ has been so annihilated as to render her incontinence almost if not quite incurable.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Die Entstehung der Entzündung, und die Wirkung der entzündungserregenden Schädlichkeiten, nach vorzugsweise am Auge angestellten Untersuchungen. VON DR. THEODOR LEBER. Leipzig: Engelmann. 1891. 4to. Pp. 535.

IN this large volume the author gives us the results of eleven years work on the nature and causation of inflammation. His very numerous experiments have been made chiefly, although by no means exclusively, on the eyes of frogs, rabbits, and guinea-pigs. The eye, particularly the cornea, has always been a favourite part in which to study the inflammatory process. Its superficial position makes it readily accessible, its transparency enables the changes to be watched as they occur, and the absence of blood-vessels in the cornea makes the process of inflammation in it much less complicated than it is when occurring in ordinary vascular tissues.

The starting-point of Professor Leber's work seems to have been the study of the changes induced by inoculation of moulds, either in the cornea or into the anterior chamber. He found, contrary to the opinions of some writers, that certain moulds will grow well as parasites in living tissues, while others again will either not grow at all in the body, or only in dead parts, stagnant secretions, or structures which do not actually form part of the living body. These differences are accounted for by the unequal susceptibility of the different moulds to the high temperature of the body, its alkaline reaction, and other circumstances.

Most of the experiments were made with pure cultures of *Aspergillus fumigatus*—a mould which grows freely in the eyes of warm-blooded animals. Experiments were also made with *Penicillium glaucum* and *Aspergillus niger*.

From these experiments two important facts were discovered—firstly, that the effects of the inoculation were not limited to that part in which the fungus was actually situated, but extended far beyond this region; secondly, that the effect was different in the

immediate neighbourhood of the mould from that produced at a distance. In the former, necrosis resulted; in the latter, irritative changes, shown by accumulation of pus corpuscles, which formed a ring around the necrosed patch. As regards the origin of the pus corpuscles, the author is at one with Cohnheim, and derives them all from leucocytes which have wandered into the inflamed part, either from the conjunctival sac through the wound in the cornea, or from the blood-vessels of the surrounding parts. Many ingenious experiments and observations were made in order to show that the fixed cells of the inflamed part never give rise to pus corpuscles. In inoculations into the anterior chamber the same double action of the moulds was seen, necrosing and irritating. In these observations every care was taken to exclude bacteria, so that the action must be attributed to the moulds alone.

The explanation given of these phenomena is briefly this—the action of the mould is due to the production of a chemical substance. Results were found to follow inoculation of extracts made from the fungi similar to those caused by the inoculation of the fungus itself. This substance, in great concentration, causes death of those parts with which it comes in contact; in less concentration it causes inflammation and suppuration. The action is exerted not only on the vessels, as supposed by Cohnheim, so as to paralyse them and make them more permeable to the plasma and white corpuscles, but an attractive influence on the leucocytes themselves is assumed which causes them to travel towards the centre of injury. This point, however, they can reach only when the intensity of the chemical poison is slight, for otherwise when they have advanced a certain distance they also undergo the paralysing and necrosing influence exerted by the poison on the other cells, and hence the inoculated part is surrounded at some distance by the pus corpuscles. It is only when the concentration of the poison is slight that the inoculated part is closely filled with pus corpuscles, which sometimes form a complete mantle around the fungus threads.

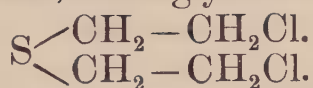
In the second part the results of inoculation with bacteria are detailed. Putrefactive bacteria, *Staphylococcus albus* and *aureus*, and the elsewhere harmless *Leptothrix buccalis* were all found to cause inflammation in the eye, and to yield results which, in principle, were the same as those got by the moulds, necrosis centrally, inflammation where the action was less intense.

In the third part the action of sterilised extracts of the moulds and

bacteria is described. These were found to excite changes similar to those caused by the living fungi; from *Staphylococcus aureus* a crystalline body was isolated. This substance, named Phlogosin, has intense inflammation-exciting properties. Its chemical characters and physiological action are fully described.

In the fourth part the inflammation-exciting action of many chemical substances, which have no relation to living organisms, is studied. It has never been denied that such substances can excite inflammation, but that suppuration ever occurs except under the influence of microbes has been called in question. The author shows that no sharp limit can be drawn between suppurative and non-suppurative inflammation—that in both the emigration of leucocytes occurs, and that the difference is merely one of degree. In all the experiments in this section the greatest care was taken to prevent bacterial infection, and unless this was successful the experiments were rejected.

Very numerous substances were examined—of metals, gold, silver, iron, copper, lead, and mercury; of other inorganic substances, glass and arsenious acid; of organic substances, gamboge, croton oil, turpentine, cantharidin, thiodiglycol chloride—



jequiritin, indigo, uric acid, starch, oil, and different normal and pathological tissues.

Most of these substances were introduced into the different parts of the eye, cornea, anterior chamber, lens, vitreous humour. They were introduced either naked or enclosed in glass tubes open at one end.

It would be impossible in a short notice such as this to give any idea of the number of the experiments, or of the ingenuity with which they were planned, or of the care with which they were carried out. We cannot too highly commend this entire work to the attention of our readers as a model of scientific investigation well worthy of the most careful study. Here we can only indicate in the briefest way the most prominent results arrived at.

It was found that even such indifferent substances as gold, silver, and glass caused inflammation, and it is argued that this must be due to chemical action—in other words, that these substances must undergo some degree of solution in the eye, and affect distant parts by diffusion.

Iron or steel causes only slight effects when introduced into the

cornea or anterior chamber, but when placed in the vitreous humour it produces a contraction (*Schrumpfung*) of the vitreous body, and a consequent separation and tearing of the retina, with a peculiar form of atrophy of this structure, involving chiefly the outer layers. The change in the vitreous body is due merely to the chemical action on it of the dissolved iron, for it occurs in dead eyes, into which pieces of iron are introduced, and also if the separated vitreous is placed in a weak solution of ferrous sulphate. That the action in the living eye is due to solution of the iron is shown by the fact that if a very insoluble preparation of iron, as hydrated oxide, be introduced, the effects are much less marked.

Copper causes much more serious effects than iron, and in all parts of the eye, except the lens, gives rise to severe suppurative inflammation. This is proved to be due to the solution of the metal. In the lens the dissolved copper at once forms an insoluble compound with the albumen of the part, which makes it less hurtful.

The introduction of pieces of copper into the human eye is not an uncommon accident. Professor Leber advocates an attempt to save the eye even when the foreign body has excited suppuration in the vitreous humour, supposing that by culture experiments it can be shown that this is not due to bacterial infection.

Lead and mercury also cause intense suppurative inflammation, changes in the vitreous and separation of the retina.

With arsenious acid the changes are intense, but more of a necrotic than of a suppurative character.

Among the organic substances uric acid was found to cause very slight reaction. No doubt, however, is thrown on the contrary results got by Ebstein and others. Starch was found to undergo change into sugar when introduced into the anterior chamber.

After discussing the different possibilities by which the action of these various substances might be explained, it is concluded that they all are cell-poisons, causing in high concentration death of the parts, in low concentration active processes; and that these processes serve to eliminate the injurious substances from the body, or to make them innocuous. Among these are the exudation of serous and fibrinous fluids, the emigration of leucocytes, and the consequent phagocytosis and suppurative softening and demarcation, and, finally, the proliferation of the tissues. It is not to be assumed, as is often done, that in inflammation the toxic substance causes first tissue-necrosis, and that this then induces the localising

(demarkirende) suppuration, but the suppuration is due, as much as the necrosis, to the direct action of the toxin.

In the fifth part it is shown, first, that when mechanical causes induce inflammation, it is due to a direct action on the vessels, and not to an influence exerted on them by reflex or other nervous mechanism.

The results following the introduction into the eye of difficultly soluble substances in fine powder, either naked or enclosed in tubes, are thus described:—Vermilion, gold, platinum, silicic acid, barium sulphate, and even graphite were found to produce distant effects, as hyperæmia, increased albuminous and fibrinous exudations, emigration of leucocytes, and formation of new blood-vessels. Their action is greatly increased by their fine subdivision. It is shown that it cannot be explained by their mechanical action, but must be due to partial solution and chemical effects produced on distant parts reached by diffusion, however difficult this is to understand in the case of such substances as graphite.

A long chapter is then devoted to the chemotactic influence exerted by the irritants on the leucocytes, in which it is shown that by no other assumption than that of such an attractive influence can the distribution of the leucocytes be explained. Their accumulation in the tubes which contain the irritants, and other phenomena seem to admit of no other explanation. In the irritated cornea of the guinea-pig, removed during the process of emigration of leucocytes from the margin, these bodies were seen to travel towards the centre, and from the rate of progress it is calculated that it would take a corpuscle from three to six hours to move from the margin to the centre of the cornea—a result which agrees well with what is actually observed in the living animal. It is interesting to notice that quinine was found to cause an emigration of leucocytes. The concentration was, however, much less than that found by Binz and other observers to check the amœboid movements of these bodies.

The wandering of the leucocytes from the vessels was supposed by Cohnheim to be due solely to a change in the vascular walls. Reasons are adduced by Leber to show that the irritant exerts an action on the leucocytes while still in the vessels, and by an attractive influence causes them actively to wander into the extravascular parts, and to move towards the seat of greater concentration of the irritant until this becomes so great as to exert a paralysing influence on their movements.

The hypopion which occurs in suppurative keratitis is shown to be due, not to the passage of pus corpuscles through Descemet's membrane, but to diffusion of the irritant into the aqueous humour, and involvement of the vessels of the iris and ciliary processes. Most ingenious and interesting experiments are detailed to prove that the active substance of *Staphylococcus aureus* is capable of diffusion, and that the diffusate can excite suppurative inflammation, which may go on to softening of the tissue.

In a chapter on the proliferation induced in the tissues by chemical irritants it is shown that this leads, for the most part, either to encapsuling or regenerative processes. Pus corpuscles are not derived from proliferation of tissue cells. Whether connective tissue corpuscles are ever formed out of leucocytes is left an open question. It is shown that the course of newly-forming vessels is determined by an attractive influence similar to that exerted on the leucocytes, so that the new vessels, which are always out-growths of old ones, tend towards the parts where the irritant exists in greatest concentration.

The softening and solution of the corneal tissue about a necrotic spot, which leads to the throwing off of the dead tissue, is spoken of as Histolysis. It is evidently due to a chemical action, and cannot be explained by the mechanical effect of the ring of pus corpuscles which precedes it. While the possibility of its being due to microbic action is not excluded when the softening proceeds from without inwards, the influence of bacteria is impossible in those cases where non-bacterial suppuration is excited in the anterior chamber, and the ulceration proceeds from within outwards. Here the process must be due to the pus corpuscles.

It was found that sterile decoctions of cocci, as well as other suppuration-exciting chemical substances, had no power of dissolving pieces of dead tissue. A tryptic action of the normal aqueous humour was also proved not to exist. Pieces of dead tissue introduced into the anterior chamber were, however, dissolved when inflammation and suppuration were excited in the eye, even when this suppuration was proved to be completely free from all admixture with bacteria. There can consequently be no doubt that this solution was due to the pus corpuscles with which the piece of tissue was infiltrated. The solution of the fibrin contained in inflammatory exudations must also be attributed to the action of the leucocytes, since puro-fibrinous exudation from the anterior chamber, and whose freedom from cocci was proved, when kept at

the body temperature, after some days or weeks underwent solution to a fluid substance resembling pure pus. Such exudation when inoculated on gelatine caused its fluidification. That this was due to an enzyme was shown by its non-occurrence if the exudation had previously been heated to 100° C. A certain amount of success attended attempts to isolate from the pus an albumen-digesting ferment. A similar action to that excited by the leucocytes is manifested by the giant cells which surround and remove foreign bodies, and by osteoclasts. The importance of phagocytosis has been greatly exaggerated by Metschnikoff. The enfeeblement or death of the parasites is usually effected extra-cellularly, and it is only after this that they are taken up by the leucocytes.

In the final chapter the process of inflammation is shown to be of a useful and conservative nature, by which the body frees itself from injurious influences.

As we have already said, it would be impossible in a short notice to do justice to a work such as this—so comprehensive and so full of detail. Of its great importance there can be but one opinion, and there can be no doubt that it will exert a powerful influence on the ideas of pathologists relative to the fundamental questions with which it deals.

The Practice of Hypnotic Suggestion, being an Elementary Handbook for the use of the Medical Profession. By GEORGE C. KINGSBURY, M.A., M.D., University of Dublin. Bristol: John Wright & Co. London: Simpkin, Marshall, Kent & Co., Limited. 1891.

THE object of the author in producing this book is to induce his professional brethren to try the remedial powers of hypnotism. He has placed the fullest information as to the methods of producing the hypnotic state before his readers, and in telling the curative properties of the method, he has kept free of the exaggerations of other writers on the subject. Indeed, some handbooks on hypnotism convey the idea that the study of medicine and the whole medical curriculum is a mistake—the one thing necessary being hypnotism.

One of our difficulties, however, is a definition of hypnotism—we cannot get a satisfactory one. A psychical condition is produced in the patient which prevents free will. This, however, is simply pushing the difficulty further back, for even Milton found “free

will" a difficulty. M. Guyau has defined hypnotic suggestion as "a nascent instinct created by the hypnotiser"—a definition which closely approximates the hypnotiser and the schoolmaster—and he quotes the opinion of Cuvier:—"Every moral or natural instinct is derived from a kind of somnambulism, because it gives us a command the reason of which is unknown to ourselves. We hear the voice of conscience, and localise this voice within us, although its origin is far more remote, and although it is a distinct echo transmitted from generation to generation."

Our instinctive conscience is a kind of hereditary suggestion; but the education of a child with its attendant rewards and punishments, and the example of the teacher, is a totally different thing to the *presto*-like change of our modern wonder-worker, the hypnotiser. Dr. Kingsbury's illustrative cases exhibit a most vicious child, aged eight, turned into a little cherub at the word of command of the thaumaturgist, and a boy, whose morals were at variance with the decalogue, becomes suddenly an observer of the whole Mosaic code.

Dr. Kingsbury is, however, deserving of our best thanks for his excellent chapter on the "Medico-legal Aspect of Hypnotism." It is invaluable to those who would study the subject from its least agreeable side; and although the facts adduced tell against hypnotism, the author plainly states them. Indeed, since the "Gouffe" murder case, the possibility of post-hypnotic suggestion must be studied by physicians. The number of cases quoted, pointing to the possibility of a hypnotised patient becoming the tool of a criminal or his victim, might, with advantage, be increased by the very interesting cases published in the January numbers of *La Riforma Medica* for 1888.

Dr. Luys' "transfer" experiments are detailed with considerable fulness in Chapter X., and as we read this and the preceding chapter, we incline to the opinion that the book will be of the greatest benefit to scientific medicine, for these two chapters alone are a strong condemnation of hypnotism from the mouth of one of its ablest advocates. They tell unmistakably of its dangers and absurdities.

We have just a few exceptions to take to this book, which, in themselves, are but trifling and can easily be remedied.

(1.) The sympathy lavished on Dr. Elliotson is given because of his being persecuted for advocating hypnotism, but was the persecution due to this cause? Mr. Braid, writing in 1855, does not

represent Dr. Elliotson as a martyr for science, but exhibits specimens of his scurrilous personalities.

(2.) On page 11 we read “we find Sir William Hamilton trying to solve some of its (hypnotism) problems.”

It is hard to prove that Sir William Hamilton did not attempt to solve the problem, especially as he wrote so much, and it is very difficult to get a complete copy of his works. But we think that all he wrote on hypnotism is to be found in the first appendix of his “Discussions on Philosophy and Literature,” which originally appeared in the *Edinburgh Review*. In dealing with the subject of “The Recognition of Occult Causes,” Sir William states that the “not unnatural presumption against occult causes,” though often salutary, has sometimes operated most disadvantageously to science from a blind and indiscriminate application, as “it has induced men obstinately to disbelieve phenomena—in themselves certain, and even manifest—if these could not at once be referred to already recognised causes, and did not easily fall in with the systems prevalent at the time.” “An example of this is seen in the difficult credence accorded in this country to the phenomena of animal magnetism—phenomena in themselves the most unambiguous—which for nearly half a century have been recognised generally and by the highest scientific authorities in Germany, while for nearly a quarter of a century they have been verified and formally confirmed by the Academy of Medicine in France.”

Here it appears to us that Sir William Hamilton only incidentally referred to hypnotism to illustrate his case.

We have exceeded our usual limits in noticing this book; its merits deserved the attention. The author has done everything possible to produce a good text-book on the subject and he has admirably succeeded. He advocates what he believes to be a useful medicinal agent in temperate language, and honestly places the evidence for and against hypnotism so clearly, that the reader may conclude for or against the revived theory. We sincerely trust that the decision may be adverse, but it is mere justice to Dr. Kingsbury to acknowledge that he has done his work well, and produced the best handbook on the subject which we have seen. With him we would advocate a searching inquiry into the phenomena of hypnotism as a branch of psychology—a science of which we know little more than the name—and are prepared in all humility to repeat with Alexander of Aphrodisias: “There are

many things in nature of which no reason can be assigned, wholly surpassing, as they do, the measure of human intellect, and known only to God, who is the Parent of all things."

Coup d'Œil sur les Thaumaturges et les Médiums du XIX^e Siècle.

Par U. N. BADAUD. Paris: Librairie Dentu, 3 Place de Valois.
Genève: Librairie Trembley, 4 Rue Corraterie. 1891. 8vo.
Pp. 340.

THE author deals with the lives of three individuals—Marie de Moerl, Domenica Lazzari, and Palma Matarrelli; their miraculous gifts, their clairvoyant powers, and their bleeding stigmata. In a letter addressed to Monsieur Anatole France—a pupil of Renan, but unlike Renan, a reactionary and pessimist—the author, an anonymous French rationalist, gives his reasons for writing the book. He explains to his dear friend that the cases of miracles treated of are simply selected because they are of a recent date, are generally believed in, and have an apparent confirmation from a physician of standing.

We will commence with the life of Palma Matarrelli, who in the year 1825 was born in Southern Italy, about ten miles south of Brindisi. Her parents were poor and pious, and the little town of Oria, where she was born, had the honour of having given a Pope, Paul II., to the Church of Rome. At fifteen years of age she was blessed with the appearance of stigmata on her hands and feet; these, however, disappeared, and before she was twenty years of age she was married to a shepherd and reared a family. She became a widow when about thirty, and fell into bad health; so much so that she was, after a time, confined to an arm-chair, where she sat with her chin almost on her knees from pains. As her pains increased so her piety grew; she lived in the church, and was carried to prayers in her arm-chair. Her reputation for piety brought crowds to beseech her to pray for one and all of their multifarious wants, and this she did, oracularly stating that their wishes would be granted or denied, as was best for them. Money was never accepted by her from any suppliant, but she always recommended that the "good sisters," for she had been received under the care of a religious sisterhood, should be remembered.

Divine favour was now shown to Palma; she was marked as before with stigmata on her hands, feet, and forehead. From the stigmata blood came in big drops for the space of one or two

minutes at a time, and a most fragrant and pleasing perfume exhaled from her body. In 1865 she was in her zenith of holiness and glory. She had been then for six years without tasting food—she was fed of heaven by miraculous communion. In church she would suddenly place out her tongue, and the blessed wafer would be, by a heavenly messenger, invisibly placed on it. In the year 1865 she was visited by a pious, faith-guided physician, M. le Docteur Imbert—a physician who had enjoyed the happiness of conversing with a Belgian stigmatist before he commenced his journey to Oria.

After some days' delay and much difficulty, Dr. Imbert obtained an interview with the seer and stigmatist. She took a decided fancy to the doctor, told him he was familiar to her in her visions, and that God had appointed him to be her historian. And at once he took up the rôle of *Scriptor rerum*, and Palma's miraculous *séances* and communions, and her prattle, make up two large octavo volumes. The doctor is naturally astonished at the "bi-location" gift of Palma. Like Sir Boyle Roche's bird, she could be in two places at the one time. Journeys to China were not unusual to her, and when there she saw the great wall, which she describes to Imbert—as he finds it spoken of in works on China. She visited, in the spirit, his Belgian stigmatist, but the poor doctor was disappointed to find that, except such general statements as that his friend was pious, blessed, loved of the Lord, he got no intelligence. The colour of the hair and eyes was unknown, as was also the furniture of the room. This error cannot afterwards have occurred, for the pious physician gave Palma the details.

The doctor was so trusting, and Palma liked him so much, that she now tried her hand at prophecy. She told of Napoleon III., the Comte de Chambord, Pius IX., and Rita. These prophecies duly appeared in the *Univers*, but the venture was too much for Palma. Napoleon III. did not play the part she assigned to him, the French people did not crown the Comte de Chambord as Henri V. in Nôtre Dame, the Italians did not restore to Pius IX. the Papal dominions, and the girl "Rita," who was to be born in Paris in 1867, and attain to extraordinary eminence, has not yet come forth.

Imbert in time produced his life of Palma Matarrelli. It excited a good deal of criticism, and our author felt that a volume of critical annotations on Imbert's work would be of much service in

correcting the reactionary tendency of Palma's life as told by her biographer, Imbert.

The criticism is just and moderate in tone, and unexceptionable in its exposure of the hallucinations and delusions of the poor maimed cripple, Palma; but we think the author would have acted more wisely by ignoring Imbert's book and Palma's existence. He has simply made her known to thousands who would otherwise have remained ignorant of even her name.

Fortunately, such hysterical and sickly creatures as Palma are found working their miracles in the holes and corners of the earth, and even if they are visited by crowds from the surrounding villages, there is no more reason to complain than there would be to the rustics attending a circus.

Life must be dreadfully dull in the out-of-the-way places, and a miracle-worker must be a blessing. The author is grieved that France, the fountain of civilisation, should see such pessimistic works poured out from her printing-presses. But there is no cause for alarm—the country of Pierre Simon Laplace, Antoine Laurent Lavoisier, Molière, Voltaire, Diderot, and others, can afford space for an Imbert. A dodo in a museum does not detract from its value.

The author should recognise that posterity judge of individuals by their acts, not by their subjective feelings. We respect Sir Thomas More for his opposition to the money grant to Henry VII., and for his "Utopia," and we forget his hair-shirt and his Friday flagellations. Yet the subjective pessimism of the man and his love of authority gave him canonisation—but the world honours him for enunciating a principle for which Hampden died, and for which the Colonies undertook the War of Independence. Nothing is gained by attacking an exploded theory, or indeed any error; they die out—are forgotten.

A temperate, well-reasoned appeal to the common-sense of the people is not unfrequently successful. Notable examples of this is Scott's "Discovery of Witchcraft" and Milton's "Areopagitica." But the time is past for attacks on mediæval superstitions; they should be allowed to quietly die out. Believers in such foolish stories are not amenable to reason, and reasoning with them is simply a loss of time. Individuals may draw down their blinds and close to their shutters, preferring darkness rather than light. Respect their photophobia: sunlight, though it may not penetrate their cabin, will nevertheless illuminate the world.

Medical Symbolism in Connection with Historical Studies in the Arts of Healing and Hygiene. Illustrated. By THOMAS S. SOZINSKEY, M.D., Ph.D., Author of "The Culture of Beauty," "The Care and Culture of Children," &c. Philadelphia and London : F. A. Davis. 1891. Pp. 171.

THAT the late author of this interesting little book—"No. 9 in the Physicians' and Surgeons' Ready Reference Series"—was an Irishman would not be readily inferred from his name; but he was born in Londonderry county; and died in Philadelphia in 1889, in his thirty-seventh year. He left Ireland at the age of seventeen; settled in Philadelphia, where he graduated, and practised as a physician until his early death. This work shows a considerable amount of curious research; but, as the author quotes only translations of Greek and Latin writers, it is probable that he was excluded from much original information by linguistic barriers. His quotations are numerous and varied. In the year 293 B.C. Rome suffered severely from a pestilence. Either the oracle at Delphi or the Sibylline^a Books were consulted, and advised that an embassy should be sent to conduct Æsculapius to Rome from Epidaurus. The embassy went, and brought back the god in the form of a serpent, B.C. 292. The only island in the Tiber (except the Insula Sacra at the mouth of the river) was devoted to the new-comer. It is now called San Bartolomeo, from the name of a church which superseded the temple of the God of Medicine, and measures about 1,200 feet by 400.

There is good reason to suppose that an actual serpent was at this time introduced into Rome as a representative or incarnation of the god. Indeed, more than one must presumably have been imported, if the species was, as is probable, continued. The author quotes from Pliny (*Nat. Hist.*, XXIX., 23):—"The Æsculapian

^a Lanciani ("Ancient Rome," p. 69), following Livy, x. 32, attributes the response to the Sibylline Books, which being consulted advised "Æsculapium ab Epidauro Romæ arcessendum." In the same work (p. 115), in describing the Palace of the Cæsars, he says:—"Inside of the pedestal that supported the statue of Apollo two golden chests were concealed, in which Augustus had deposited, as in a safe, the Sibylline books. The last account I have been able to find of these Sibylline books, so intimately connected with the history of Rome and of the world, belongs to the year 363 of the Christian era. In the winter of that year, more precisely in the night between the 18th and 19th of March, the Temple of Apollo caught fire, and was destroyed to the very foundations. The only things which the firemen, led by Apronianus, prefect of police, could save from the conflagration were the Sibylline books. Their subsequent fate is utterly unknown."

snake was first brought to Rome from Epidaurus, but at the present day it is very commonly reared, in our houses even; so much so, indeed, that if the breed were not kept down by the frequent conflagrations, it would be impossible to make head against the rapid increase of them." The species is still common in Italy. It is the *Coluber* or *Elaphis* *Æsculapii*; orange-brown above, straw-coloured beneath, $3\frac{1}{2}$ to 4 feet in length, about as thick as a stout walking-cane. It is harmless, gentle, and easily tamed. Dr. Sozinsky thought that this species should be employed in medical symbolism, rather than the uræus, or asp, which symbolised life and healing in Egypt.

In the eighteenth chapter, on Miscellaneous Medical Symbols, some suggested explanations of professional manners and customs will be found—chiefly taken from Jeaffreson. Thus the barber's pole, we are told, represents the stick which the patient about to be bled held in his hand, the red stripe representing arterial blood, the blue venous, the white a bandage. The gold-headed cane came down from Hermes. The head was often hollow, and contained some reputed disinfectant. The book abounds in out-of-the-way—but not very far out of the way—bits of information of this kind; and will amuse an idle hour, if the busy practitioner can spare one for its perusal.

Geburtshülfliche Taschen-Phantome. Von DR. SHIBATA, Spezialist der Gynækologie und Geburtshülfe zu Tokio, Japan. Munich: J. F. Lehmann. 1891.

THIS little work consists of a small book of eleven pages, accompanied by a female pelvis of cardboard and two phantoms, one-third natural size, constructed of the same material. The bodies and extremities of the phantoms are ingeniously jointed together, so that they can be folded in such a manner that the various normal and abnormal attitudes, presentations, &c., of the foetus can thus be demonstrated.

The first three pages of the book are devoted to a preface by Professor Winckel, of Munich, whose pupil the author was. With the exception of a few pages, wherein the method of using the phantoms and pelvis is explained, and a table of the various presentations of the foetus given, the rest of the book is given up to a short history of the development of the use of the phantom in obstetrical teaching. The object of the author is to construct a

mannikin and pelvis which, owing to their cheapness and portability, will be within the reach of every student, and one which at the same time will prove of practical use for obstetrical demonstration. The construction of the phantoms, &c., has been carefully carried out, and the work will undoubtedly prove of considerable use to students and nurses who are commencing obstetrical training.

Subjective Noises in the Head and Ears : their Ætiology, Diagnosis, and Treatment. By H. MACNAUGHTON JONES, M.D. London : Baillière, Tindall, & Cox. 1891. 8vo, pp. 152.

SUCH is the title of Dr. H. Macnaughton Jones's latest literary production. It is dedicated to Dr. Adam Politzer, of Vienna; and in the preface the author states that the book originated in the paper he read before the British Medical Association at Birmingham in August, 1890, on the subject of "the Ætiology of Tinnitus." He considers that his paper was "the first attempt at any systematic differentiation of causes that he is aware of, based on anatomical, physiological, and pathological grounds."

There are eight chapters, dealing with—I. Causation; II. Diagnosis and Examination of a Case; III. Differential Diagnosis; IV. Prognosis; V. Treatment; VI. Some Anatomical Points bearing on Reflexes of the Trigemini; VII. Other Therapeutic Remedies; VIII. Aural Electro-Therapeutics. This final chapter was written by Dr. James Cagney. There are 63 illustrations, almost all of instruments and appliances bearing the name of the manufacturer.

No doubt this work contains much information, and the author has read much before writing it; but it is a pity that a difficult subject such as the one he treats of should be rendered utterly unpalatable by being couched in language so involved as to be unintelligible.

The following sentence, which we transcribe, will suffice to justify our discontent:—

"It may be that some explanation can be offered by assuming that the nerve filaments of different portions of the basilar membrane were affected at the same and at different times in the same and in different individuals, so that the impulses arising from irritations of the nerve fibres supplying narrow or broad portions of the basilar membrane, and the superimposed elements of corti (devoted to the transmission of certain waves of sound to the auditory centre) having different qualities of

intensity, timbre, and pitch, would probably convey such sensations of sound as were ordinarily transmitted to them by natural stimulations of these same fibres due to the passage of sound waves through the air."

One hundred and twenty-five words without a stop!

The very next sentence contains seventy-three words.

Such involution of sentences and convolution of ideas can help but little to elucidate an already abstruse subject.

It is with the most sincere regret that we notice the deterioration, in literary style, of British Medical writings. German and American authors have, we fear, much to answer for in this regard, and those writers who deal with subjects difficult of comprehension will do well to endeavour to make their language more simple than the above.

Alas! for Sir Thomas Watson.

The Physical Signs of Cardiac Disease. By GRAHAM STEELL, M.D., Edin.; F.R.C.P.; Physician to the Manchester Royal Infirmary; and Lecturer on Clinical Medicine, Owens College. For the Use of Clinical Students. Second Edition. Manchester: J. E. Cornish. 1891. Pp. 77.

WE have read this little book of Dr. Steell's with very great pleasure. It is short and easy to read, and yet it not only gives a very full and complete account of the physical signs of disease of the heart, but also mentions many points omitted in larger and more pretentious works. Thus, the fact noticed first by Professor Austin Flint is mentioned, that in certain exceptional cases of free aortic reflux so close a simulation of a præ-systolic murmur imperfectly developed may be heard as to deceive even a practised ear. We cordially recommend this work, not only to students, but also to practitioners of medicine. The subjects treated of are of the highest practical importance, and we think that few will read the book without deriving benefit therefrom.

The first chapter is Anatomical, and deals with the position of the heart with relation to the surface of the body, and is illustrated by several clearly drawn and useful diagrams. We then have treated in order Inspection, Palpation, Percussion, and Auscultation. The various points to be ascertained by each of these methods of investigation are first enumerated in tabular form, and subsequently are described at length. There is an appendix on the Pulse, illustrated

by many excellent sphygmographic tracings. The description and explanation of heart-murmurs, thrills, and other similar phenomena leaves nothing to be desired either in clearness or accuracy.

On one point we think Dr. Steell is a little too dogmatic. In speaking of pulsation of the right auricle visible to the right of the sternum, he says it is systolic and not præ systolic, being produced by tricuspid reflux into a dilated auricle. That is not invariably the case; in one case of obscure heart disease—probably pulmonary obstruction—with great hypertrophy of the right side of the heart, we noticed a diastolic (præ systolic) pulsation in the third right intercostal space.

We quite agree with the author in protesting against the application of the term “murmur” to pericardial friction sounds. The term “murmur” ought to be restricted to endocardial and vascular sounds.

To conclude, we consider this book to contain an admirable account of a most important subject.

A Manual of Diseases of the Nose and Throat, including the Nose, Naso-Pharynx, Pharynx and Larynx. By PROCTOR S. HUTCHINSON, M.R.C.S. London: H. K. Lewis. 1891. 8vo. Pp. 127.

THE author hopes that this work will supply “a useful small book for those who are taking up the post-graduate study of this special branch of medicine.”

It contains 38 well-executed illustrations, and is, on the whole, a readable book, though it cannot be said to be in any sense an important or valuable addition to current medical literature.

When speaking (p. 5) of Posterior Rhinoscopy, the author directs that while the tongue is depressed by means of a spatula, and a mirror is held in the mouth, “the patient should be persuaded to breathe through the nose while examination is made.” We wonder if Mr. Hutchinson has ever succeeded in *persuading* the patient to do this impossibility!

The work is divided into four sections:—

- I. Diseases of Nose, and Naso-Pharynx.
- II. Diseases of Pharynx.
- III. Diseases of Larynx.
- IV. Diseases of Larynx in the Lower Animals.

This last section is the only attempt at novelty in the book, and is treated of under four heads—viz., Inflammations, New Growths, Paralysis, and Glanders.

“Of making many books,” of this kind, “there is no end, and much study” of them “is a weariness of the flesh.”

Transactions of the American Otological Society. Twenty-third Annual Meeting. Vol. IV., Part 4. Pp. 651.

THIS volume contains, in addition to a copious index of otological literature, from July, 1889, to July, 1890, thirteen papers on a wide range of subjects connected with otology—viz., from the anatomy of the elephant's ear to a discussion on the use of the nasal douche. It would be impossible in the space at our disposal to treat each paper separately, and we shall therefore only deal specially with those which contain anything new or of practical importance. Amongst the latter are three contributions on diseases of the mastoid, entitled, “Mastoid Sclerosis as illustrated by a very Typical and Fatal Case,” “Mastoiditis interna purulenta following Erysipelas,” and “Four Cases of Mastoid Cell Disease cured by Wilde's Incision and proper Antiseptic Treatment.”

In the first of these papers Dr. Richards points out that in sclerosis of the mastoid the usual symptoms of disease are commonly absent, with the exception of severe pain, and a bulging and redness of the posterior wall of the bony portion of the meatus close to the tympanic membrane—a sign which we have frequently seen. Such a condition leads not merely to difficulty in diagnosis, but tends to diminish the effect of local measures—leeching, Wilde's incision, &c., and may seriously embarrass operative treatment. Dr. Pomeroy's paper on Wilde's incision shows that, with proper care, cases of mastoid disease can be cured without perforating or trephining; but judging from the duration of his cases (two weeks to two months), we feel inclined to believe that the disease must have been very limited in extent, as this is very much below the usual length of time which such cases last. But that, even under unfavourable circumstances, patients can recover, with proper care, from serious disease of the bone has been demonstrated to us by an instance of complete recovery in a phthisical individual after two and a half years' careful treatment.

Dr. Theobald records a case in which he removed a septum which had formed in the external meatus as the result of a previous

chronic otorrhœa. Hearing was improved by the operation, but the discharge was renewed. In the discussion which followed, one of the speakers stated that he looked upon such membranes as a reparative process, and that they should be left untouched.

Opinions seem greatly divided on the frequency of otitis following the use of the nasal douche, even in the simple form of a common salt solution. Its occurrence after nasal operations is also alluded to.

Dr. Burnett relates two instances of the good effect of excision of the tympanic membrane and malleus, in purulent otorrhœa and aural vertigo, with dry catarrh, and several of the speakers approved of the removal of diseased ossicles.

An interesting article on the use of the paper disc dressing in cases of perforation is contributed by Dr. Barclay, who cites nine apparently convincing cases. The advantages which he claims for this method, in addition to its being protective, are, that the disc acts as an irritant to the edges of the perforation, as well as being a support.

The remaining contributions are entitled, "On the Removal of a Bullet from the Ear with the assistance of the Galvano-Cautery;" "Fracture of the Malleus Handle, with Luxation at the Incudo-Stapedial Joint;" and "Aneurism first recognised in the Fundus of the Ear, later appearing in the Neck."

LINEAR CRANIOTOMY FOR MICROCEPHALUS.

DR. RANSOHOFF reports the above operation (*Medical News*, Philadelphia, June 13th, 1891) in a child aged three years and seven months. He operated on the right side, and the operation was followed by great improvement; the left arm, which was nearly useless, became as much used as the right, and deglutition, from being difficult and imperfect, became normal. Other symptoms improved also. If necessary, Dr. Ransohoff will operate on the left side in six months after the first operation. Hæmorrhage was checked by the Esmarch strap. Of 25 cases operated on by Lannelongue only one died of sepsis directly due to the operation, and two from croup, one or two months after operation; it is possible, though not probable, that the laryngeal spasms were of meningeal origin, but at any rate the mortality is not high. Out of six previously reported cases there were two deaths—one from heart-failure and one from acute anæmia.

PART III.

SPECIAL REPORTS.

REPORT ON FORENSIC MEDICINE.

By H. C. TWEEDY, M.D., Dubl.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow of the Royal College of Physicians of Ireland; Physician to Steevens' Hospital and to Simpson's Hospital.

THE LIABILITY OF ACCIDENT INSURANCE COMPANIES.

THE recent discussion at the Derbyshire Summer Assizes in the case of *Holmes v. The Scottish Life Assurance Company* is not calculated to raise the spirits of directors of companies for insurance against accident. The facts of the case are briefly these. Mr. H. J. Holmes, a coachbuilder, 66 years of age, had an insurance policy for £1,000 against accidents in the company in question. On November 27th, 1890, he slipped down in the road; on returning home he was nearly doubled up with pain. He went to bed, and never left his room till he died. On cross-examination of the widow it was elicited that her husband had suffered from sickness and flatulence, and that he had been gradually getting thinner for some little time before the accident.

Mr. C. B. Dalton, who had attended Mr. Holmes for eight or nine years, deposed to the existence of bruises on the right ear and right shoulder. These marks were consistent with his having had a heavy fall. He gave instructions to those who were nursing Mr. Holmes to watch for the appearance of blood in anything that came from him. He saw a motion that was passed by Mr. Holmes a few days after the accident, which contained digested blood. Vomiting of altered blood shortly afterwards set in. The patient continued to vomit and pass blood for about three weeks, and then the hæmorrhage completely ceased. After this the patient improved slightly, but constipation and nausea existed. He died on January 24th. At the *post-mortem* examination the liver was found slightly fatty; the stomach showed no signs of organic

disease, but was slightly dilated. At the pylorus there was a scirrhus mass, which, however, did not obstruct the passage.

Dr. Samuel Wilks, who was called on behalf of the defendants, attributed Mr. Holmes's death to disease—cancer of the stomach. "In his opinion it was not due to the fall, but was an ordinary simple case of cancer in the stomach. . . . The state of this cancer was sufficiently advanced to kill, and it was not at all necessary to bring in the fall to account for his death."

Mr. Justice Vaughan Williams, in summing up, said the jury had a very simple statement of fact to try—namely, whether Mr. Holmes came to his death by reason of a personal injury caused by accident, or whether it was due to previously existing disease dangerous to life. If they thought that death was due to the accident, although Mr. Holmes was in delicate health at the time, arising from cancer, then their verdict would be for the plaintiffs. If, however, they thought that death was due to previously existing disease, although hastened and accelerated by the accident, then their verdict would be for the defendants.

The special jury, after a very short consultation, gave a verdict for the plaintiffs.

This case certainly seems to stretch the liability of companies insuring against accidents to a most serious extent. Here we have a man stricken with a mortal disease which had already made considerable progress, as was shown by the *post-mortem* examination. He meets with an accident which is followed by hæmatemesis and melæna—very common symptoms of cancer of the stomach. As Dr. Seymour Sharkey (who gave evidence on behalf of the defendants) pointed out, had it not been for the existence of cancer of the stomach, the deceased might have fallen down repeatedly in the way described, and recovered. The medical evidence indicated very clearly that death was due to cancer of the stomach, and the utmost that can be said for the accident is that it may have determined the onset of the hæmorrhage.

LAW FOR THE PREVENTION OF BLINDNESS.

The legislature of New York has adopted a law, the substance of which is given below, for the prevention of that element of the causation of blindness which follows ophthalmia neonatorum. The statistics of institutions for the blind show that not far from one-fifth of all the cases arise from that disease, and the sufferers belong largely to a class of population that is attended by mid-

wives and untrained nurses. The New York law, which went into effect on September 1st, is as follows:—Section I. Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant to report the fact in writing within six hours to the nearest health officer or some legally qualified practitioner of medicine, of the city, town, or district in which the parents of the infant reside. Section II. Any failure to comply with the provisions of this Act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

VACCINATION AND LOCAL OPTION.

There are rumours afloat, says the London correspondent of the *Manchester Guardian*, that the Royal Commissioners of Vaccination in their fourth report, which it is understood is now in the press, recommend some modification of the existing law, one being that the principle of “local option” should be adopted, and that sanitary districts should be at liberty to relax the administration of the vaccination laws within their respective jurisdictions, provided that they have adopted the more recent legislation relating to infectious diseases, and have built a sufficiently commodious isolation hospital. The other proposal is that parents who conscientiously object to the operation should be permitted to sign a declaration to that effect on the form now given after the registration of a birth, and that they should then be left alone, with the exception that the medical officer of the district would keep such cases specially under his eye.

THE ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD FOR IRELAND.

In the previous annual report attention was drawn to the fact that there had been a decrease in the average daily number of persons relieved both in and out of the workhouses as compared with the year preceding; and the present returns show a further decrease in the average daily number of persons relieved in the workhouses, and also in those who received out-door relief, the former being 41,793, and the latter 62,235, a total of 104,028, which is less than the average daily number relieved in and out of the workhouses in the year 1889–90, by 1,794. There was an increase of 3,358 in the

total number admitted to workhouses in sickness, while in those suffering from fever or other contagious disease there was an increase of 452. The total deaths in workhouses from February 1890 to March 1891 were 11,577, or a decrease of 321. Fever caused 333 deaths, or a decrease of 44; lung disease, 2,211, as against 2,218; but no death from small-pox took place in any workhouse during the year. There was a decrease of 156 in the cases of fever treated by dispensary medical officers, and a decrease of 579 as regards scarlet fever. In consequence of the attention recently drawn to the subject of ether drinking as an intoxicant, in portions of the north, Dr. Stafford, medical inspector, made inquiry respecting its alleged prevalence, and the board received an exhaustive report from him on the subject. The total expenditure for medical and educational purposes, and for salaries under the Public Health (Ireland) Act, amounted to £99,604 12s. 2d., or an increase of £3,673 9s. 9d., while the Medical Charities Expenditure came to £161,341, as compared with £157,955.

IRISH LUNATIC ASYLUMS.

Sir Arthur Mitchell, Mr. Holmes, and Dr. MacCabe, who were appointed by the Lord Lieutenant to report on the management of Irish lunatic asylums, have just issued their report. They recommend that the inspection of these institutions should be transferred to the Local Government Board, but that an entirely new system should be created. They think there ought to be an improved classification, that is to say, that certain asylums should be set apart for the reception of certain classes of patients—the curable, the dangerous, &c. With regard to the lunacy laws, they think the existing laws do not sufficiently guarantee the treatment of the insane, nor do they safeguard the public against unnecessary detention in asylums. Lunatics in asylums in Ireland increased from 8,587 in 1875 to 12,383 in 1889, but this increase they do not regard as an increase of mental disease, but rather that it is due to the sending of persons to asylums who would not be sent under other circumstances. As to taxation, the commissioners think that the maintenance of the poor and of the insane ought to fall on one and the same tax.

LUNATIC ASYLUMS, IRELAND: ANNUAL REPORT.

The fortieth report shows that of the 16,251 patients mentally affected on January 1st last, 11,488 were located in district asylums,

3,961 in workhouses, 621 in private asylums, 2 in gaols, and 179 in the Central Criminal Asylum. As contrasted with the number of the insane on January 1st, 1890, there has been an increase of 225. This summary does not include the number of insane in private dwellings, or wandering at large. Of the 11,488 under treatment in district asylums, 3,095 were admitted during the year. Of these, 2 451 were first admissions, while the remainder (644) had been under restraint previously. The discharged amounted to 1,849, of whom 1,255 had recovered, while 480 were relieved, and 114 not improved. The deaths were 936 in number, giving a percentage of 8·2, which is somewhat higher than the past few years, consumption being the disease which proved most fatal, accounting for 255 of the total deaths in district asylums, or a percentage of 27·2. The inspectors call attention to the few *post-mortem* examinations held by medical officers, and they state that with the exception of the Richmond Asylum they are hardly known. The importance of these investigations cannot be too strongly urged, tending as they do (1) to protect the insane, since by them any injuries inflicted during life may be discovered; (2) to safeguard the asylum staffs, preventing after-accusations of ill-treatment being brought forward; and (3) to advance our knowledge of brain disease, and afford the means to the medical officers of asylums for the study of pathology. In reference to the physical causes of the mental diseases in the inmates of district asylums, 251 were attributed to intemperance in drink, 617 to hereditary influences, 155 to bodily diseases, and 36 to sunstroke, out of a total of 2,535; while 560 were due to moral causes. The average cost per head on the total expenditure was £22 7s. 8d.

THE FRENCH LUNACY LAW.

The reform of the existing law relating to lunacy in France has been for some time before the Chamber of Deputies, but from the opinion expressed by the Congress of Alienists recently held at Lyons it would appear that at any rate that section of the medical profession which is particularly concerned with the administration of the law is on the whole satisfied with the present state of things. At the last meeting of the congress the following resolution was passed unanimously: "The members of the Congress of Alienists at Lyons, being of opinion that the law of 1838, which has been in daily application for the last fifty years, meets the wants of patients, and has only given rise to abuses extremely few in number and of very questionable genuineness, express the hope that the law of

1838, subject to certain improvements in its details, may be maintained in its general provisions."

SUICIDES OF SCHOOL CHILDREN IN GERMANY.

During the last eight years, 289 school children committed suicide in Germany; of these 49 were girls. The causes assigned were, fear of punishment, 80; mental disease, 26; morbid ambition, 19; fear of examination, 16; practical joking, 7; disappointed love, 5. In view of the severe educational *régime* which obtains in the fatherland, this record scarcely comes as a surprise. It is a terrible indictment against "over-pressure," the effects of which can scarcely be expected to be limited to those hapless children who are driven to destroy themselves.

THE RIGHTS OF AN UNBORN INFANT.

One of the most curious questions that has ever come before a court of justice was that of *Walker v. Great Northern Railway*, which recently occupied the attention of the Queen's Bench Division, Dublin. The plaintiff was a passenger in an excursion train that was wrecked in 1889 at Armagh, and was *enceinte*, the child being born deformed. She alleges that the child which she was carrying at the time of the accident was injured, and as a result born deformed. The railway company, by counsel, demurred, alleging that an unborn child had no right of action or interest to recover damages for personal injuries. The plaintiff's case was lost, the demurrer being allowed. It may be mentioned that a sum of £800 had already been given to the mother by the company, as a compensation for injuries received by her.

CREMATION.

Cremation is coming more and more into favour in Germany. In addition to the crematorium which has been in operation at Gotha since 1877, and where from five to six hundred bodies are now burnt every year, and another which was recently established at Hamburg, a new one was consecrated at Ohlsdorf on August 22nd. Another will be opened at Carlsruhe in October.

THE EFFECT OF EXPLOSION PRODUCTS ON THE SYSTEM.

As little or nothing has previously been written on this subject, Dr. Thomas Darlington's remarks (*Medical Record*, Dec. 13, 1890) may be received with some interest, being the result of five years'

experience in mining districts, where explosives, such as dynamite and nitro-glycerine are in constant use. Two classes of cases were observed:—First, where a considerable quantity of the products was inhaled at one time—acute cases; secondly, where the men constantly breathed a small amount—chronic cases. The acute cases varied according to the amount inhaled. In cases where a small amount is inhaled, the men being then placed beyond its influence, the results are as follows:—Giddiness, a trembling sensation, flushing of the face, succeeded sometimes by pallor, frequently nausea, sometimes vomiting, with throbbing through the temples and fulness in the head, as if it would burst, followed by an intense headache characteristic of poisoning by nitrites—similar to that of nitrite of amyl—only not so violent, but more persistent, frequently lasting forty-eight hours. The heart's action is increased, and the pulse full and round, though somewhat compressible. Where the toxic effect is considerable, the giddiness is followed immediately by unconsciousness, the patient presenting appearances of asphyxia. The coma soon passes off, and is succeeded by drowsiness, languor, cold sweats, intermittent pulse, and often nausea and vomiting. Frequently there is hiccough and severe headache. Such are the symptoms of acute poisoning. Nearly all these cases seem to recover. Two fatal cases are noted, where death was due to paralysis of respiration. Chronic cases present four prominent symptoms—headache, cough, indigestion, and disturbances of the nervous system, but the first three are in reality the outcome of the fourth. Rapid improvement takes place if the men affected with it get to work on top. Attention is drawn to the fact that, while the products of dynamite explosions are water, carbonic acid gas, nitrogen di-oxide, none of the symptoms described, save asphyxia, are those which might be expected of those compounds. Cases, however, are cited where small portions of dynamite having been swallowed accidentally, the toxic symptoms which followed corresponded with those above enumerated, as due to the explosion-products. From this Dr. Darlington infers that suspended in the air, after an explosion, there are certain particles of the explosive material in a volatile state, which are inhaled and subsequently absorbed in the lung. With regard to treatment, as a preventive, the use of such apparatus or machinery, whether by blowing or by sucking, that will rapidly clear the tunnel or cavity from noxious gases or fumes, is recommended. Of course, such measures as are generally used in cases of asphyxia, are of service. But in addition

to these, the use of cold to the head, and of atropin, ergotin, or other vaso-motor stimulants, administered subcutaneously, are of necessity indicated and exceedingly efficacious. Special stress is laid on the use of ammonia, both as an inhalant and as an internal remedy, and it is suggested that workmen in mines should invariably carry with them small vials of this drug.

ARSENIC AS A DOMESTIC POISON.

Dr. J. J. Putnam, in a paper read before the Massachusetts Medical Society (*Boston Med. and Surg. Journ.*, June 25th), urges the importance of this subject. His first point is that the actual absorption of arsenic in consequence of the exposures of daily life is extremely common. He caused the urine of a number of his hospital out-patients to be examined, some of whom presented symptoms which might possibly have been due to arsenical poisoning, though they were not characteristic of it, whilst others were selected as not presenting such symptoms. Of more than 150 such cases, arsenic was found in the urine in about 30 per cent. This would indicate a very widespread exposure on the part of the community at large, as of many of these patients it could be positively stated that they had taken no arsenic as medicine, and it may further be stated that the discovery of arsenic in the urine does not prove that a given patient's symptoms are of arsenical origin. The next point is that arsenic accumulates in the tissues, so that the elimination of a certain quantity implies the presence of a far larger quantity in the body. The daily elimination represents only a small fraction of that present in the body, and arsenic has been discovered in the bones and liver six months after the cessation of medicinal treatment; it is, therefore, not rapidly eliminated from the body. Clinically Dr. Putnam divides cases of poisoning into three groups: those where arsenic causes acute irritation of the mucous membrane without necessarily being present in the tissues in any large quantity; those where the accumulated arsenic exerts all at once a poisonous action; and those where simple disorders of the general or local nutrition are gradually set up through the action of minute and repeated doses. Under this head he deals chiefly with neuritis, and he points out that paralysis is only the final and gross symptom of a neuritis which may have been going on for a long time. The next point is that poisoning is liable to occur during the therapeutic use of arsenic; here he particularly warns against the dangers that may arise in those who are peculiarly susceptible to arsenic, in whom ordinary doses

may prove highly dangerous. The exact mode in which the poison enters the body—that is, whether in the gaseous form or not—is still uncertain.

DEATH UNDER METHYLENE.

The *Brit. Med. Journ.* quotes the following paragraph from the *St. James's Gazette* of September 1st:—

“*Death while under Chloroform. (Sic):*—An inquest was held at Carlisle yesterday, by Mr. John Hewetson Brown, city coroner, on Mrs. Margaret Oxley, 27 years of age, wife of a waggon inspector on the Caledonian Railway, who died on Saturday while under the influence of an anæsthetic. The deceased went on Saturday afternoon by appointment to Mr. Parker, chemist and dental surgeon, to have her teeth extracted. Her husband accompanied her, and by arrangement Mr. Parker, before performing the extractions, proceeded to administer 3 drachms of methylene, a preparation of chloroform (*sic*), which he had administered with success in thousands of cases before, and even double the dose used in this case. The patient had not taken more than half a dozen inspirations when she moaned and fainted. Mr. Parker, finding her pulse failing, used restoratives, but without success. Medical assistance was sent for and artificial respiration tried, but the woman never regained consciousness, and died within half an hour. The *post-mortem* examination showed that the heart was healthy, and that death resulted from asphyxia. The jury returned a verdict of ‘Death while under the influence of methylene, properly administered by a qualified dentist surgeon,’ who, along with his assistant, was acquitted of blame.”

It will be seen that there are one or two peculiarities in this statement. In the first place methylene is spoken of as a preparation of chloroform, and then it is stated that Mr. Parker had administered it with success in thousands of cases before. This is rather a remarkable statement considering the locality, and the position which he holds. On referring to the *Dentists' Register* for 1890 we find the entry against Mr. Parker's name to be as follows: “Parker, William, 1 Warwick Street, Carlisle. *Date of Registration* 1878 December 31st. *Description and Date of Qualification:* In practice before July 22nd, 1878.” We are not aware of anything in the Dentists Act which authorises a gentleman registered under the Act, in virtue of his having been in practice before July 22nd, 1878, to describe himself, or to cause himself to be described, as a dentist

surgeon, and perhaps under the circumstances some further explanation will be forthcoming.

A "PERFECTLY HARMLESS" POWDER.

An inquest was recently held by the deputy coroner for East Surrey on the body of an infant, aged 11 weeks, who died from vomiting and diarrhoea following the administration of a powder by a chemist. As usual the chemist attended and swore that the powders in question were perfectly harmless, consisting only of one grain of calomel and a little jalap. The administration by a medical man of so enormous a dose to an infant of such tender age would, if followed by death, certainly deserve a verdict of manslaughter, but then, as is well known, it is only qualified practitioners who may not kill people with impunity under pretence of treating their ailments. We cannot but think that there must be some other way in which the folly of his conduct may be permanently impressed upon the chemist than the very slight scare (if any) occasioned by the coroner's inquest.—*British Medical Journal*, August 15th, 1891.

POISONING BY TINNED SALMON.

With regard to the cases of irritant poisoning after eating tinned salmon, which were referred to in the *British Medical Journal* of July 11th, 1891, p. 84, Dr. C. Stormont Murray, of Gloucester Place, thus writes:—"On June 28th, 12 A.M., I was summoned to a house in the neighbourhood with a message that a whole family had been poisoned. On my arrival I found six persons in bed—a lad aged 12 years (since deceased), three daughters, and mother, and the cook. I ascertained that the patients had all partaken of tinned salmon for supper on the previous evening, and were seized towards early morning with violent pains in the stomach, sickness, and headache, with profuse diarrhoea. The daughters were apparently in great pain, with temperature varying from 102° to 103°; pupils dilated; tongue dry, and of a brownish colour; intense thirst, and violent diarrhoea; the pulse rising from 110 to 160, respirations quick. The mother also complained in a similar manner, but with not quite such severe pain; she seemed to have recovered a little. I found the lad in a semi-unconscious and very collapsed condition, with temperature 104°; pulse almost imperceptible; respirations very quick; skin cold and clammy; pupils widely dilated, and very restless; in fact in

a dying condition, fæces and urine being passed unconsciously. Dr. Barlow kindly met me in consultation, and we agreed that it was a case of poisoning, presumably from the salmon. In spite of all that could be done, after getting more restless, he gradually sank, and died at 3 o'clock next day. At the necropsy all the organs were healthy, except the brain, which was very congested on the surface; and the stomach, which was found to be in a highly inflamed condition, as were also portions of the intestines, one piece of which was inflamed to such an extent as to be almost in a gangrenous state. Dr. Luff, who kindly made an analysis of the above, reports that the stomach was highly inflamed, as if it had either been inflamed or attacked by some irritant substance previous to death. The intestines also were in a very inflamed condition, but he could not find any trace of any animal or mineral poison in either of the viscera. He examined very carefully the solder round the tin, and found it in a perfect condition, and a specimen of salmon similar to that which was supposed to have caused the mischief; this he found quite fresh, and in good condition, and absolutely free from any poison that could be detected. All the remaining members of the family have recovered. Altogether, the symptoms pointed to irritant poisoning, and in the absence of any metallic poison being detected, the only explanation that can be offered is that death occurred from the presence of ptomaines."

POISONING BY IMPURE HYDROGEN GAS USED FOR INFLATING BALLOONS.

Dr. P. Oulmont (*La Méd. Moderne*, Dec. 4, 1890) has been unable to find in toxicological literature any record of similar cases, and deems it advisable to call attention to a danger run by aéronauts which has not hitherto apparently been dwelt upon. The first case was that of a man, aged twenty-two, who made an ascent in a balloon on the evening of June 29, 1890. He descended again in half-an-hour, and, about an hour and a-half later, he felt ill, vomited, and lost consciousness. A doctor, who was called to see him on July 2nd, found him in a state of prostration, and presenting a typhoid aspect. He had vomited incessantly since the onset of the illness; he suffered from violent headache, and his face was cyanosed. The mucous membranes and soft palate were of a deep yellow colour. Pulse thready. He had passed no urine since the onset of his illness. About an ounce of dark, bloody urine was drawn off. Bowels constipated. Enemata brought away dark, blood-stained

evacuations. The symptoms continued much the same till July 5, when he died. Inquiry proved that this man's head was close to the escape-valve of the balloon, and that during the voyage he had inspired a good deal of gas. The second case was that of a man, aged twenty-six years, who had assisted in securing the balloon, referred to in the first case, after its descent. He got caught beneath the balloon, and for a time inhaled the gas which was escaping freely from the valve. The gas had a strong smell, which made him feel ill, but he started to return home on foot. He was obliged, however, to rest several times, feeling a great sense of fatigue and a difficulty of breathing. From this time on till the 7th of July, when he died, he suffered from marked dyspnoea and prostration. There was almost complete suppression of urine. A little bloody urine was passed, and the stools contained blood. The skin presented a pale yellow tint. The conjunctivæ were yellow. The pulse was thready, and there was some delirium. An autopsy was obtained in this case, and the principal lesions were found in the kidneys, which were acutely inflamed and studded with ecchymoses. As to the nature of the gas used in the balloon, M. Oulmont ascertained that the balloon was not filled with ordinary coal-gas, but with hydrogen which was manufactured by the action of hydrochloric acid on zinc. Now, the zinc of commerce is known to contain lead and small quantities of arsenic and sulphur. Pure zinc is indeed inconvenient from an industrial point of view, for it retains on its surface the minute bubbles of hydrogen, which after a time prevent the contact of the acid with the metal. The gas, therefore, when first prepared, contains traces of sulphuretted hydrogen and of arseniuretted hydrogen. The latter gas is known to be extremely poisonous. The chemist Gehlen met with his death through merely smelling an apparatus in which he was making this gas. Sulphuretted hydrogen, though toxic, is much less so. According to Parent-Duchâtelet, a man can breathe without danger an atmosphere containing one per cent. of sulphuretted hydrogen. On the other hand, pure hydrogen gas is not poisonous. It may be therefore, concluded that the death of these patients was caused by the arseniuretted hydrogen present in the gas. It follows that careful purification of the hydrogen gas employed to inflate balloons is desirable.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, September 12, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Aug. 22.	Aug. 29.	Sept. 5.	Sept. 12.		Aug. 22.	Aug. 29.	Sept. 5.	Sept. 12.
Armagh -	12·6	25·2	25·2	18·9	Limerick -	21·0	15·4	15·4	19·6
Belfast -	17·5	22·0	18·1	24·9	Lisburn -	17·2	30·1	8·6	8·6
Cork -	20·3	12·6	21·0	18·9	Londonderry	9·6	9·6	16·0	11·2
Drogheda	22·0	4·4	8·8	30·8	Lurgan -	32·2	4·6	50·6	27·6
Dublin -	19·6	23·5	17·8	21·2	Newry -	3·9	3·9	11·7	3·9
Dundalk -	19·5	15·6	15·6	15·6	Sligo -	67·6	26·0	26·0	15·6
Galway -	34·2	15·2	11·4	26·6	Waterford -	9·6	19·2	14·4	28·8
Kilkenny	14·1	14·1	28·2	47·0	Wexford -	18·0	31·5	9·0	4·5

In the week ending Saturday, August 22, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 17·8), was equal to an average annual death-rate of 18·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·7 per 1,000. In Glasgow the rate was 18·4, and in Edinburgh it was 18·9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 19·0 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in nine of the districts to 10·4 in Sligo—the 13 deaths from all causes registered in that district comprising 2 from enteric fever. Among the 86 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from enteric fever, and 11 from diarrhœa. The 29 deaths in Cork comprise 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 203—112 boys and 91 girls; and the registered deaths to 141—69 males and 72 females.

The deaths, which are 15 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·6 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 19·6 per 1,000. During the first thirty-three weeks of the current year the death-rate averaged 25·3, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 14 deaths from zymotic diseases were registered, being 5 below the number for the preceding week, and 14 under the average for the 33rd week of the last ten years. They comprise 1 from scarlatina, 1 from whooping-cough, 8 from diarrhœa, and 1 from dysentery.

Ten cases of enteric fever were admitted to hospital, being 4 over the number of admissions for the preceding week, but 3 under the number for the week ended August 8. Six enteric fever patients were discharged, 1 died, and 57 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

The hospital admissions include, also, 4 cases of scarlatina and 1 case of typhus, but no cases of measles were received. Six cases of scarlatina, 5 of typhus, and 4 of measles remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 12, being 10 below the number for the preceding week, and 5 under the average for the 33rd week of the last ten years. The 12 deaths comprise 6 from bronchitis, 2 from pneumonia, and 2 from croup.

In the week ending Saturday, August 29, the mortality in twenty-eight large English towns, including London (in which the rate was 17·3), was equal to an average annual death-rate of 18·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·6 per 1,000. In Glasgow the rate was 18·2, and in Edinburgh it was 18·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 20·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in eight of the districts to 12·9 in Lisburn—the 7 deaths from all causes registered in that district comprising 2 from whooping-cough and 1 from enteric fever. Among the 108 deaths from all causes registered in Belfast are 4 from whooping-cough, 2 from enteric fever, and 6 from diarrhoea.

In the Dublin Registration District the registered births amounted to 163—78 boys and 85 girls; and the registered deaths to 164—85 males and 79 females.

The deaths, which are 11 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·0 in every 1,000 of the population (unrevised) by the Census of 1891. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 23·5 per 1,000. During the first thirty-four weeks of the current year the death-rate averaged 25·2, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 11 deaths from zymotic diseases were registered, being 3 below the number for the preceding week, and 16 under the average for the 34th week of the last ten years. They comprise 2 from whooping-cough, 4 from enteric fever, and 4 from diarrhoea.

The number of cases of enteric fever admitted to hospital is 6, being 4 under the number of admissions for the preceding week. Eighteen enteric fever patients were discharged, 1 died, and 44 remained under treatment on Saturday, being 13 below the number in hospital at the close of the preceding week.

The hospital admissions include, also, 3 cases of measles, 1 case of scarlatina and 1 of typhus. Six cases of measles, 7 of scarlatina, and 6 of typhus remained under treatment in hospital on Saturday.

Twenty-one deaths from diseases of the respiratory system were registered, being 9 over the number for the preceding week and 3 in excess of the average for the 34th week of the last ten years. They comprise 16 from bronchitis and 4 from pneumonia or inflammation of the lungs.

In the week ending Saturday, September 5, the mortality in twenty-eight large English towns, including London (in which the rate was 16·0), was equal to an average annual death-rate of 16·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·5 per 1,000. In Glasgow the rate was 19·4, and in Edinburgh it was 16·3.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 18·0 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in ten of the districts to 9·2 in Lurgan—the 11 deaths from all causes registered in that district comprising 1 from whooping-cough and 1 from diarrhœa. Among the 89 deaths from all causes registered in Belfast are 1 from typhus, 2 from whooping-cough, 2 from enteric fever, and 22 from diarrhœa. The 11 deaths in Limerick comprise 1 from each of the following diseases—viz., typhus, whooping-cough, and diarrhœa.

In the Dublin Registration District the registered births amounted to 182—99 boys and 83 girls; and the registered deaths to 127—73 males and 54 females.

The deaths, which are 45 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 18·5 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 17·8 per 1,000. During the first thirty-five weeks of the current year the death-rate averaged 25·0, and was 2·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty deaths from zymotic diseases were registered, being 9 over the low number for the preceding week, but 15 under the average for the 35th week of the last ten years. They comprise 4 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 9 from diarrhœa (being 10 under the average number from that cause in the corresponding week of the last ten years).

Twelve cases of enteric fever were admitted to hospital, being 6 over the number of admissions for the preceding week. Four enteric fever patients were discharged, and 52 remained under treatment on Saturday, being 8 over the number in hospital on Saturday, August 29.

The hospital admissions include, also, 1 case of measles and 2 cases of scarlatina, but no cases of typhus were received. Five cases of measles, 7 of scarlatina, and 6 of typhus remained under treatment in hospital on Saturday.

Only 11 deaths from diseases of the respiratory system were registered, being 10 under the number for the preceding week, and also 10 below the average for the 35th week of the last ten years. The 11 deaths comprise 6 from bronchitis and 3 from pneumonia or inflammation of the lungs.

In the week ending Saturday, September 12, the mortality in twenty-eight large English towns, including London (in which the rate was only 15·0), was equal to an average annual death-rate of 17·3 per

1,000 persons living. The average rate for eight principal towns of Scotland was 18·7 per 1,000. In Glasgow the rate was 20·0, and in Edinburgh it was 16·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·6 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·9 per 1,000, the rates varying from 0·0 in ten of the districts to 7·2 in Waterford—the 12 deaths registered in that district including 3 from diarrhœa. Among the 122 deaths from all causes registered in Belfast are 1 from scarlet fever, 8 from enteric fever, and 17 from diarrhœa. The Registrar of Lisburn district remarks :—
“ There have been a number of cases of enteric fever recently.”

In the Dublin Registration District the registered births amounted to 147—78 boys and 69 girls; and the registered deaths to 151—74 males and 77 females.

The deaths, which are 11 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·1 in every 1,000 of the estimated population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 21·2 per 1,000. During the first thirty-six weeks of the current year the death-rate averaged 25·0, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty deaths from zymotic diseases were registered, being equal to the number for the preceding week, but 12 under the average for the 36th week of the last ten years. They comprise 1 from whooping-cough, 3 from enteric fever, and 14 (including 13 deaths of children under 5 years old) from diarrhœa.

Fourteen cases of enteric fever were admitted to hospital, being 2 over the number of admissions for the week ended September 5. Ten enteric fever patients were discharged, 1 died, and 55 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

The hospital admissions include, also, 2 cases of scarlatina and 1 case of typhus. Eight cases of the former and 5 of the latter disease remained under treatment in hospital on Saturday.

Fifteen deaths from diseases of the respiratory system were registered, being 4 over the number for the preceding week, but 4 under the average for the 36th week of the last ten years. They comprise 8 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 1 from croup.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of August, 1891.*

Mean Height of Barometer,	-	-	-	29·731 inches
Maximal Height of Barometer (on 6th, at 9 p.m.),				30·217 „
Minimal Height of Barometer (on 25th, at 9 p.m.)	-			28·949 „
Mean Dry-bulb Temperature,	-	-	-	57·2°.
Mean Wet-bulb Temperature,	-	-	-	54·9°.
Mean Dew-point Temperature,	-	-	-	52·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·399 inch.
Mean Humidity,	-	-	-	85·5 per cent.
Highest Temperature in Shade (on 11th)	-		-	69·2°.
Lowest Temperature in Shade (on 30th),	-		-	45·6°.
Lowest Temperature on Grass (Radiation) (on 30th),				38·7°.
Mean Amount of Cloud,	-	-	-	70·0 per cent.
Rainfall (on 25 days),	-	-	-	4·953 inches.
Greatest Daily Rainfall (on 8th),	-	-	-	·985 inch.
General Directions of Wind,	-	-	-	W., S.W. N.W.

Remarks.

An exceedingly unsettled, cool, rainy, and even stormy month—a constant succession of extensive and often deep atmospherical depressions crossing the British Islands from W. or S.W. at short intervals. The centres of these systems usually traversed the more northern districts, but on the 20th and 21st a cyclone, in which the barometer was as low as 29·15 inches, passed directly over the South of England, causing an excessive fall of rain in that district. On the 25th–26th, a depression was observed in which the barometer sank to 28·61 inches in the North of Scotland.

The present is the third consecutive year in which August has proved an unfavourable and an inclement month.

In Dublin the arithmetical mean temperature (58·1°) was decidedly below the average (59·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 57·2°. In the twenty-six years ending with 1890, August was coldest in 1881 (M. T. = 57·0°), and warmest in 1871 (M. T. = 62·0°). In 1885, the M. T. was only 57·1°; in 1879 (the “cold year”), it was 57·7°; in 1887, it was 60·3°; in 1888, it was 58·2°; in 1889, 58·6°, and in 1890, only 57·2°.

The mean height of the barometer was 29·731 inches, or 0·166 inch below the corrected average value for August—namely, 29·897 inches. The mercury marked 30·217 inches at 9 p.m. of the 6th, and fell to 28·949 inches at 9 p.m. of the 25th. The observed range of atmospherical pressure was, therefore, 1·268 inches—that is, a little more than an inch and a quarter.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 57.2° , or 0.4° below the value in August, 1888 and 1889, but 0.9° above the value in August, 1890. It was 1.1° below the value for July, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*Min.* $\times .47$), the value was 57.8° , or 1.5° below the average mean temperature for August, calculated in the same way, in the twenty-five years, 1865–89, inclusive (59.3°). The arithmetical mean of the maximal and minimal readings was 58.1° , compared with a twenty-five years' average of 59.7° . On the 11th, the thermometer in the screen rose to 69.2° —wind, W.S.W.; on the 30th the temperature fell to 45.6° —wind, S. The minimum on the grass was 38.7° on the same date.

The rainfall was 4.953 inches, distributed over as many as 25 days. The average rainfall for August in the twenty-five years, 1865–89, inclusive, was 2.825 inches, and the average number of rainy days was 15.5. The rainfall, therefore, and the rainy days were considerably in excess of the average. In 1874 the rainfall in August was very large—4.946 inches on 18 days—and in 1868 also 4.745 inches fell on, however, only 13 days; but the heaviest downpour in August occurred in 1889, when 5.747 inches were registered on 22 days. On the other hand, in 1884, only .777 inch was measured on 8 days. In 1887, 1.520 inches of rain fell on 16 days, in 1888, 1.270 inches on 12 days, and in 1890, 2.799 inches on 19 days.

High winds were noted on as many as 13 days, and attained the force of a gale on four occasions—namely, the 12th, 25th, 26th, and 31st. A thunderstorm occurred on the 9th. Thunder was heard on the 3rd and 21st. Lightning was seen on the 28th. Temperature did not once reach 70° in the screen, the maximum being 69.2° on the 11th. Hail fell on the 3rd. A solar halo was seen on the 30th, and lunar rainbows appeared on the night of the 25th.

On Saturday, the 1st, a soft W. wind and showers prevailed.

Changeable, cool, showery, and at times squally weather characterised the week ended Saturday, the 8th. During the first four days, conditions depended upon an extensive depression, which travelled in a southeasterly direction across Scotland, finally reaching the Yorkshire coast, where it remained nearly stationary for two days. It caused strong N.W. and N. winds, low temperature and heavy thundershowers, accompanied by hail in some instances. This was the case in Dublin on Monday, the 3rd. On Wednesday an area of high pressure came in over Ireland from the Atlantic and under its influence the wind moderated and the weather became dry. The amount of cloud, however, remained large, and there was a lamentable want of sun-heat by day. On Friday, the barometer began to fall once more, while the wind backed towards W.—these sure signs of the approach of new depressions from the westward were followed

by a succession of heavy showers and squalls from S.W. on Saturday, this bad weather extending to England a few hours later. In Dublin the mean height of the barometer was 29·891 inches, pressure increasing to 30·217 inches at 9 p.m. of Thursday (wind, N.N.W.). The corrected mean temperature was 57·9°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 57·1°. The rainfall amounted to 1·646 inches on four days, ·307 inch being measured as the product of Monday's thunder-showers, and ·985 inch on Sunday morning, the 9th. The prevailing winds were N.W. and N.

Throughout the week ended Saturday, the 15th, the type of atmospherical distribution was cyclonic in the north, while high pressures prevailed over the Peninsula, France, and parts of Germany. Hence the weather was unsettled in Ireland, Scotland, and the North of England; finer in the south of England, and still finer and warmer on the Continent generally. At the beginning, rainstorms, accompanied by thunder and lightning, occurred in many places—the showers in Dublin on Sunday and Monday being particularly heavy—·668 of an inch of rain being measured at this station on Sunday alone. Tuesday proved warm and in most respects summerlike, but next day the wind rose to a moderate gale from W. and this was followed by another considerable downpour of rain. Fresh breezes and light showers characterised the remainder of the week. In London, a dry period occurred between Monday evening and Saturday morning. In Dublin the mean height of the barometer was 29·873 inches. The corrected mean temperature was 60·4°, the mean dry bulb readings at 9 a.m. and 9 p.m. being 1·3° lower, namely, 59·1°. The thermometers in the screen rose to 69·2° on Tuesday, the 11th. The rainfall was 1·055 inches on four days—·668 inch being measured on Sunday, when thunder occurred. The prevailing winds were W. and W.N.W.

As for the week ended Saturday, the 22nd, except on Sunday, which was fine and bright at first although cloudy and threatening in the evening, the weather was eminently unsettled, cloudy, cold, rainy, and at times blustering—quite unlike the middle of August. On Sunday long fan-like sprays of cirriform cloud spread across the sky from the westward, heralding the approach of an extensive depression to our North-west Coasts. Under the influence of this system, the wind freshened from southerly (S.E., S., and S.W.) points, and rain fell generally and in places in large quantities from day to day. The centre of lowest pressure remained off the W. and N.W. of Ireland until Thursday afternoon, shallow secondary depressions developing meanwhile from time to time over Great Britain so as to cause the rainy, unsettled weather to spread to that country also. On Thursday, the weather improved greatly in Ireland as a new depression of rapidly increasing intensity appeared off the S.W. of England, subsequently crossing that country in an east-north-easterly direction. This system caused downpours of rain over all

the more southern parts of England, and the north of France—the largest measurements at 8 a.m. of Friday being 1·6 inches at Hurst Castle, 1·5 inches at Cambridge, and 1·4 inches in London. On this day frequent thunder-showers occurred in the neighbourhood of Dublin, where Saturday also proved dull, very wet and inclement for the most part until 3 p.m., when the sky cleared. In Dublin the mean height of the barometer was 29·609 inches. The corrected mean temperature was 57·3°. The mean dry bulb readings at 9 a.m. and 9 p.m. were 56·9°. Rain was measured every day, the total amount being 1·171 inches, of which ·451 inch was referred to Monday. Thunder occurred frequently on Friday.

As regards the week ended Saturday, the 29th, the record is once more one of very unseasonable, broken weather—high winds, low temperatures, and frequent rainfalls being the leading features of the period. This week will be memorable in particular for the passage across the British Islands of what will probably be found to be the deepest atmospherical depression ever observed in August. It is true that deep cyclonic systems pass almost periodically across North-western Europe during the last week of August, but none so deep as that which swept over the British Islands on Tuesday night had appeared during the previous 30 years at least. On the 31st of August, 1876, the barometer sank to 28·920 inches at Shields; on the 28th in 1879, it fell to 29·111 inches in Dublin and to 28·740 inches at Mullaghmore, Co. Sligo; on the 25th in 1881, it fell to 29·014 inches in Dublin and to 28·880 inches at Leith. But on Tuesday night the 25th, 1891, it sank by 9 p.m. to 28·949 inches in Dublin, and at 8 a.m. next morning it read only 28·61 inches at Sumburgh Head, in the Shetlands. The accompanying gales were violent in the extreme—in Dublin almost a tempest blew from S.W. between midnight and 3 a.m. of Wednesday the 26th. The week generally was inclement, but on Wednesday and Saturday conditions improved for the time being. In Dublin the mean height of the barometer was 29·572 inches, pressure varying between 28·949 inches at 9 p.m. on Tuesday (wind, S.S.W.), and 30·046 inches at 9 p.m. of Saturday (wind, W.N.W.). The corrected mean temperature was 55·8°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 55·6°. Rain fell on seven days to the total amount of ·882 inch, of which ·332 inch was referred to Monday and ·278 inch to Tuesday. The prevailing winds were S.W. and N.W.

Sunday, the 30th, was at first fine and bright, but cold, the thermometer falling in the shade during the early morning to 33° at Nairn, 35° at Stornoway and Wick, 38° at Aberdeen, and 39° at Loughborough. In Dublin the minimum was 45·6°, at Parsonstown it was 42°. In the afternoon the sky became overcast, and rain again set in. On Monday, the 31st, there was a moderate or fresh S.W. gale, with heavy showers, but a high temperature in Dublin.

The rainfall in Dublin during the eight months ending August 31st has

amounted to 15·888 inches on 117 days, compared with 9·455 inches on 96 days during the same period in 1887, 17·264 inches on 121 days in 1888, 18·893 inches on 134 days in 1889, 18·386 inches on 137 days in 1890, and a 25 years' average of 17·558 inches on 128·1 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in August, 1891, was 4·385 inches, distributed over 24 days. Of this quantity 1·250 inches fell on the 17th, and ·475 inch on the 16th.

PERISCOPE.

ARMY MEDICAL STAFF.

THE following is the official list of the successful candidates at the recent competitive examination for commissions in the Medical Staff of Her Majesty's Army:—

Order of Merit	Names	Total No. of Marks	Order of Merit	Names	Total No. of Marks
1	Pilcher, E. M.	3,300	11	Alexander, J. D.	2,645
2	Johnson, H. P.	3,165	12	Holt, R. H. E. G.	2,640
3	Beyts, W. G.	2,970	13	Kelly, J. F. M.	2,635
4	Stalkartt, H. A.	2,780	14	Dunn, H. N.	2,620
5	Morphew, E. M.	2,710	15	Hughes, G. E.	2,620
6	Fleming, C. C.	2,700	16	Martin, C. B.	2,610
7	Tyacke, N.	2,700	17	Withers, S. H.	2,600
8	Mitchell, L. A.	2,690	18	Buchanan, G. J.	2,580
9	Lawson, C. B.	2,680	19	Crawford, G. S.	2,550
10	Anderson, E. C.	2,670	20	Hennessey, J.	2,550

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES.

Anatomy and Physiology.—Sir Joseph Fayrer. Monday, 24th August, 1891—from 10 a.m. till 1 p.m. 1. Describe the hip joint, giving an account of the bones, ligaments, and all other tissues which enter into its formation. 2. Give a description of the origin, course, and anatomical relations of the internal iliac artery. Describe also its principal branches, and trace their distribution. 3. Describe the pancreas, giving an account of its anatomical relations, histology, and functions; the pancreatic fluid, and its physiological action. 4. Describe the origin, relations, distribution, and connection of the glosso-pharyngeal nerve and its branches; give an account also of its functions. 5. Describe the parts met with in a dissection of the axilla, giving an account of them in the order in which they are exposed.

Surgery.—Mr. Pollock. Monday, 24th August, 1891—from 2 p.m. till 5 p.m. 1. Describe the causes, the course, and the results of acute and chronic periostitis, and the difference of treatment under each condition. 2. What are the general characteristics by which epithelioma may be usually diagnosed? Describe its minute structure. State if there are any conditions which may influence its commencement; and what are the tissues most frequently attacked. 3. What are the most frequent fractures of the bones of the forearm, near the wrist? Do they ever implicate the articular surfaces? Describe the necessary treatment in these injuries, and state what permanent defects are occasionally found to result from these accidents. 4. Describe the condition known as Phagedæna; to what causes it is to be attributed; and the treatment to be employed in the attack. Is it ever liable to be followed by a fatal result, and to what cause may such fatality be occasionally due? 5. What are the most common dislocations at the ankle joint? Describe the position of the foot in either case; the complications which usually attend or follow such injuries; and the treatment to be pursued under these varying conditions. 6. A patient is the subject of an old hydrocele, with thickened walls; or of hæmatocele of some long standing; or for years has had a large irreducible inguinal hernia. State the symptoms by which each case may be pretty correctly diagnosed, and the treatment to be adopted in either condition.

Medicine.—Sir William Aitken. Tuesday, 25th August, 1891—from 10 a.m. till 1 p.m. 1. A case for analysis and commentary:—A man in the prime of life, whose mother and sister had died of consumption, but who was himself of strong, robust frame and active habits, who lived regularly and well, mainly on flesh meat and bread, with wine or ale rather than water, and who, although used to high feeding, was not intemperate. He made it a rule to take a long and fast walk every morning before breakfast, and all his spare time was devoted to boating, yachting, or horse exercise. His first feeling of any ailment was that of constriction at the top of the windpipe, and a sense of choking when stooping forward, with a slight difficulty in swallowing, especially the last drops of whatever fluid he happened to be drinking. Occasionally there was also a peculiar cough, harsh, dry, and grating; but it occurred seldom and gave little uneasiness. He continued to live as usual, and to take his customary long morning walks. In about a month after these symptoms began to show themselves, and when sitting perfectly quiet, he suddenly felt his mouth fill with fluid, and coughed up between 30 and 40 ounces of fluid arterial blood, which was expelled without effort in one clot, and without froth and mucus. Fainting came on and hæmorrhage ceased, so that he soon recovered from the immediate effects of loss of blood, and continued quiet during the remainder of the day. From this time he lost all sense of choking or constriction in the throat,

and was in fact better in health than previously. Treatment consisted in local abstraction of blood by cupping, a spare diet, and less violent exercise. His ordinary avocations continued to be followed for three months after this sudden hæmorrhage, when cough again returned, which was believed to be catarrhal, and so it was neglected till it became more and more frequent and distressing, attended with difficult expectoration—small in quantity and of a rusty colour, occasional fits of dyspnœa supervening. General bloodletting, counter-irritation, and confinement to the house were had recourse to, followed by marked alleviation of all symptoms. After two more months of enforced rest he again resumed his work, and rode on horseback as before. Three days afterwards he was suddenly seized with what appeared to be a fit of spasmodic asthma, from which he soon recovered; but in the evening of the same day he had a still more severe attack, and from that time till death (six days afterwards) he was unable to assume the recumbent position. Dyspnœa recurred in fits daily, more or less urgent, breathing became more laboured, with fits of coughing, and difficult deglutition. The dyspnœa was attended with loud, noisy, prolonged inspiration. On the third day before death the pulse rose to 100, and became somewhat hard. Blood to the amount of 20 ounces was taken with great relief to symptoms, breathing became easier, dysphagia diminished, and with the aid of an opiate a quiet night was passed. But strength was rapidly sinking; and death took place about six months after the first accession of symptoms. About 14 days after the sudden hæmorrhage, the following notes of physical signs are on record:—Marked dulness above the left clavicle and scapula (on strong percussion), large tubular breath and voice sounds in the same space; tubular expiration above the upper inner angle of right scapula. No unusual pulsation felt. There was also appreciable difference in the voice sounds in the two supra-spinal fossæ, and for six weeks before death a very peculiar rough and loud respiratory murmur pervaded both lungs during a series of attacks of hoarseness with cough and scanty expectoration; while the inspiratory murmurs were comparatively facile, the expirations were long, noisy, and growling. The same dulness continued throughout, with increase of tubular sounds very loud above the left scapula, and at inner margin of the right, but no obvious pulsation. Expound the pathology of this case, and in so doing state your views regarding the initiation, the progress and development of the symptoms, and their mutual relationship, if any. Describe what you would expect to find at the *post mortem* examination. 2. Write what you know about the natural history of diphtheria, limiting your statements to the consideration of (1) the causation of this disease, and (2) the measures for its prevention or prophylaxis. 3. Give the chief physical signs of the following pulmonary diseases; and mention the chief points of differential diagnosis:—Pleurisy with effusion,

pulmonary apoplexy, acute lobar pneumonia, acute pulmonary phthisis (with rapid softening). 4. Write what you know about the anti-septic treatment of enteric fever; giving examples of the method and the mode of prescribing the antiseptics used. Describe the effects which result from such treatment when successful. 5. The following preparations (amongst others) have been added recently to the British Pharmacopœia, having been in more or less popular use for several years, viz.:—"Antifebrin," now officially named "acetanilidum;" "antipyrin," now officially named "phenazonum;" "paraldehyde," now officially named "paraldehydum;" "strophanthus;" "sulphonal." State what you know regarding the medicinal properties of each of these, the official preparations of them, the uses to which they have been put, and the doses of each of them.

Chemistry.—Dr. Allman. Tuesday, 25th August, 1891—from 2 p.m. till 4 p.m. 1. In illustration of the law of multiple proportions write down the series commencing with hydrochloric acid and continued by the oxy-acids of chlorine. 2. Mention some test by which the presence of sulphuric acid may be detected. 3. By what process may oxygen be prepared from potassium chlorate? Give the equation which expresses the reactions which take place in this process.

Natural Sciences.—Dr. Allman. Tuesday, 25th August, 1891—from 4 p.m. till 6 p.m. [N.B.—The replies to be written with the INK provided, and not with a pencil or pale ink.] *Zoology.*—1. What are the classes of the vertebrata? Group these classes in accordance with the presence or absence of an amnion during development. 2. By what characters is the mammalian fauna of Australia specially distinguished? 3. Refer the following to their sub-kingdoms, classes, and orders, respectively:—Porpoise, pearly nautilus, water-newt, viper, locust, starfish. *Botany.*—4. What is a syncarpous, and what is an apocarpous ovary? Cite one or more examples of each from genera contained in the Pharmacopœia. 5. Contrast the structure of a grain of wheat with that of a bean. 6. Refer to its natural order a plant with the following characters, and give one or more examples:—Leaves alternate; inflorescence without bracts; calyx with five united sepals, persistent; corolla regular, gamopetalous, 5-lobed, plaited in the bud; stamens, five inserted on the corolla, and alternate with its lobes; ovary 2-celled, with axile placenta; seeds numerous, albuminous. *Physics.*—7. What is meant by the mechanical equivalent of heat? 8. What is meant by the "Law of the Sines" as applied to the refraction of light? 9. What is the chief difference between a so-called continental climate and a so-called insular climate?

TREPHINING OF THE SPINE FOR FRACTURE.

D. N. KNOX, M.B., records (*Glasgow Medical Journal*, April, 1891) the case of a pit boy who was crushed by a cage falling on his back; there

was complete loss of power and of sensation in both lower limbs. He trephined over the 11th dorsal vertebra, and the displaced vertebra was pushed back into position. At the time of writing cure was perfect, except for limited movement of the ankle and tarsal joints, but these were gradually growing freer.

AN UNUSUAL FORM OF CHANCER.

DR. E. D. MAPOTHER, F.R.C.S.I., reports the following case:—On Jan. 13th, 1891, a professional man from India, aged forty-nine, and intemperate, consulted me for a chancre which had appeared a week before. About twenty-seven years ago he had chancroids and suppurating buboes, which healed very slowly. The sore was on the dorsum, one-third of an inch behind the corona, and there were hard enlarged glands in each groin. Small doses of blue pill, small inunctions in the groins, and dry lint were ordered. Good progress was made for a fortnight, but then the sore began to extend slowly, and there arose round it, except towards the corona, a thick ridge. This near the frænum was œdematous, but above there was a semi-solid deposit in the areolar tissue of the preputial folds. Many local applications were tried without effect, and iodoform seemed only of little service. On March 9th iodide of potassium was prescribed together with the mercurial treatment. After ten days the skin over the hardest part of the ridge gave way, and matter similar to that in gummata came out. Improvement followed, but so slowly that it was April 13th before cicatrisation was complete. It ulcerated again superficially on the 20th, but finally healed in three weeks. The enlargement of the glands has become absorbed, and no secondaries appeared. The peculiar deposit and the extreme slowness of healing, due probably to the age, habits, and former residence of the patient, seem to render the case worth recording. A somewhat similar form was described by Fournier.^a—*Lancet*, Sept. 19, 1891.

NUTRITIVE VALUE OF BEEF PREPARATIONS.

DR. CHITTENDEN describes (*Medical News*, Philadelphia, 27th June, 1891) the results of his examinations of various beef preparations as to their nutritive value. Valentine's Meat Juice and Wyeth's Beef Juice have the ordinary characters of dilute meat extracts, with a small addition of soluble albumen. This addition, however, is too small to have any practical significance. Certainly a food which contains only .005 of proteid matter cannot in any sense be termed a concentrated nutrient. Murdoch's Liquid Food and Bovine or Bush's Fluid Food are chemically essentially the same; both contain only a small amount of solid matter (16 to 19 per cent.), but this is mostly nutritive, being composed in great part of soluble albumen. The appearance of the products, together with

^a Archives Générales de Médecine, Nov., 1867.

small amount of mineral matter, and especially the small amount of phosphoric acid, would indicate that they are not prepared from muscle-tissue, but rather from blood. All or nearly all the nitrogen in these preparations is available for nutriment as it exists in the form of proteid matter. Johnston's Fluid Beef apparently consists of an extract of beef to which has been added a portion of the insoluble tissue, ground to a fine powder, and the mixture evaporated to a pasty consistency. There is 9·12 per cent. of insoluble proteid matter, which practically represents the bulk of the truly nutritive matter contained in the preparation. Beef Peptonoids manufactured by the Arlington Chemical Company contains only 7·31 per cent. of albumoses and peptone directly available as nutriment. Mosquera Beef Meal contains about 90 per cent of nutriment, 29·43 per cent. being in the form of soluble products of digestion, albumoses and peptone, ready for immediate assimilation.

CRISES OF THE DIGESTIVE TRACT IN GRAVES' DISEASE.

To *The Practitioner* for September, 1891, Mr. A. Maude, of Westerham, Kent, contributes a short but important paper on this subject. He writes:—"The diarrhœa and vomiting of Graves' disease have not received in England the attention which their frequency and marked character deserve. Both are very common symptoms; Marié^a records the occurrence of diarrhœa in twelve out of fifteen cases, Dr. Samuel West^b in seven cases out of thirty-eight, and Dr. Hector Mackenzie,^c in eight out of twenty-eight; but of the thirty-two cases recorded from Manchester in the same report of the Ophthalmological Society it only occurred in one case. The fact is that patients often forget or overlook these attacks, ascribing them to ordinary digestive arrangements. Of nine patients whom I have had constantly under observation during 1890-91, four have presented these crises in their typical form. The diarrhœa has a very marked character, being paroxysmal, so paroxysmal that Charcot has likened it to the gastric crises of locomotor ataxy. The bowels are quite natural and regular perhaps for some weeks, and then suddenly, at any time of day, but usually in the early morning, and with no apparent cause, the patient has an urgent call to the closet and passes without pain or colic a huge liquid motion. The motions are serous and generally light-coloured. There are three or four motions of the same character each twenty-four hours for several days, and then the attack ceases as suddenly as it began, and there is an interval perhaps for a few days, weeks, or even months. Another common digestive trouble is unnatural craving for food (*boulimie* of the French, *βουλιμία* = 'monstrous

^a P. Marié, Contributions à l'Étude des Formes Frustes de la Maladie de Basedow. Paris. 1883.

^b Ophthal. Soc. Trans. 1886.

^c Clinical Lect. Grave's Disease. *Lancet*, II. 1890.

hunger'). It is not so common as diarrhœa, and presents two forms; in one the craving occurs in paroxysms, extending over several days, at long intervals, in the other the hunger occurs almost daily, several times a day, for periods of an hour or so; the subjects describing themselves as 'faint for want of food,' often soon after a meal; the hunger in this second variety is not so intense as in the first. Both these conditions may accompany the diarrhœa and vomiting, but do not necessarily do so. Hæmorrhage from the stomach and intestines may accompany these crises. The hæmorrhage is usually small in amount and the blood bright. I have frequently seen the vomited blood, and have never found it digested, while melæna is rare. The explanation of this probably is that the same vaso-motor change which produces the bleeding is sure to produce a serous flux into the digestive tract, which is followed by immediate evacuation of contents. Marié draws attention to the fact that diarrhœa has been recorded in such cases as present marked tremor,^a and this was observed in my cases, but there is little doubt that only confirmed cases of Graves' disease present these intestinal crises, and very few confirmed cases are without tremors. Nevertheless diarrhœa may be an early symptom, for though in three of my cases the patients had suffered respectively for two, three, and twenty years from some signs of Graves' disease, in the fourth an attack of diarrhœa was one of the earliest symptoms, but it proved to be a very rapidly developing instance. Charcot doubts whether these crises ever show themselves in precedence of other cardinal symptoms. In one case of mine the attacks were sometimes accompanied by rise of temperature; so that once when she was staying at a town where typhoid was then epidemic, she was pronounced to be suffering from it. Her description of her illness tallied so exactly with that of subsequent attacks that I have no doubt it was one of her usual crises;^b but it was almost the first she had had, though they afterwards became more regular and violent. I failed to find any constant relation between the fever and diarrhœa, though she was subject to occasional rise of temperature, as is so common in Graves' disease. No direct relation was found by M. Bertoye in his elaborate investigation^c on the subject, though he establishes the existence of cases in which the temperature-chart resembles that of typhoid most strikingly. The patient mentioned above, who had the attack of diarrhœa early in the disease, presented the peculiarity of sudden rectocele at the occurrence of the first attack.^d There was slight uterine prolapse, but the uterus was small and healthy, and the menses were regular and natural. The descent of

^a Vogt, Rössner, Burney Yeo, Morell Mackenzie, Rey Eger.

^b This mistake has been made before; see Bertoye, *op. cit. infra*.

^c Etude clinique sur la Fièvre du Goître Exophthalmique, 1888.

^d The full notes on this case are to appear in the St. Bartholomew's Hospital Reports for 1891.

the rectal wall was, however, marked, and in spite of various pessaries accompanied subsequent crises of diarrhoea. The whole pelvic floor and organs in the pelvis were very thin and weak, though otherwise healthy. The diarrhoea rarely yields to any treatment. Dr. West speaks of it as 'uncontrollable, hardly amenable to any treatment.' I have tried full doses of opium by mouth or suppositories in all cases, but in only one did it ever produce any effect; in her it always lessened the severity and duration of the attack."

CAMPHORIC ACID IN NIGHT-SWEATS.

DR. HARE (*Medical News*, Philadelphia, 4th April, 1891) has tried, on the authority of Cumbernale, camphoric acid in the night-sweat of phthisis. In two cases, when all other drugs had failed, he found 20 grains of camphoric acid, administered an hour before the time the sweats usually came on, completely relieved the troublesome symptom, and that without causing dryness of the mouth or any gastric irritation. It was administered rubbed up in a little milk, and washed down with water.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Ophthalmic Charts.

MR. FRANK HAYDON has sent us some charts for the easy registration of the physical condition of eyes. Such charts are by no means novel, but Mr. Haydon has, we think, succeeded in adopting a very practical arrangement of his series.

They consist of three charts:—I. "The Front of the Eye with various Sections." This sheet is most useful for all external diseases, and also contains a couple of sections for noting the conditions found after enucleation, &c. II. "Fundus (*round*) coloured." III. "Fundus (*square*) coloured." Having two charts so nearly alike as these are seems an extravagance, but it is a harmless one, as they can be purchased separately according to the taste of the surgeon.

The disc is placed in the centre, so that the charts can be used to represent the appearances found by either the direct or the indirect method of examination.

The author says the best coloured pencils to use are the Creta Levis, made by E. Wolff & Son. The best white to use is the French crayon, or better still, Chinese white in the liquid form.

The charts are published by Down Brothers, 5 & 7 St. Thomas's-street, London, S.E., and cost 4s. per 100.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVI.—*Cerebral Tumour, illustrating the difficulties of Cerebral Localisation.*^a By E. H. BENNETT, M.D., F.R.C.S.I.; Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital.

THE man who suffered from the brain tumour I now present to the Section came under my observation in September, 1890; he had been ailing for some time before this date, and had been advised in the early part of July to arrange his affairs. I can give no details of the case before I saw him myself.

He was a tall, gaunt man, aged forty-five. He was helped into my study by his brother, who had a good deal of trouble in getting him from the train to a cab, and from the cab into my house. With very little support—the grasp of a finger—he could stand alone; but his efforts to walk were ill co-ordinated, and he had to be held from behind under the arms in order to walk. He had a fatuous face, with exophthalmos, and an open mouth, with a hanging lower lip. His speech was slow and slightly inarticulate, but correct. He had loss of memory, but was free from any delirium or fever, and was most biddable. He had no definite paralysis. After admission to hospital his symptoms became more marked. At first he could stand with the support of a finger. After a little time he had to be held beneath the arms or he would

^a Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, February 20, 1891.

fall, always to the right; put sitting in a chair he would fall out of it before long to the right; he became more feeble mentally; his memory failed more completely; although seeing me every day he failed to recollect my name; he wandered about his farming and his poaching.

On October 16th Mr. Story examined his eyes for me, and reported that there was no optic neuritis; that the pupils acted normally; that the palpebral fissure was abnormally wide; and that winking was infrequent and incomplete. The upper lids did not follow the downward motions of the globes with normal accuracy; also distinct anæsthesia—that is, partial loss of sensation and reflex action of the conjunctiva—existed.

At this time, and from the very first, the man had difficulty of swallowing, caused, as far as one could judge, by defect in the power to start the act of pharyngeal deglutition. He would keep food in his mouth for a great length of time, and it required an effort, during which he often choked, before he could get the food past the fauces. This and the dulness of the ocular reflex varied greatly; some days he would be nearly normal, and then both failures returned, rather increased after each remission. His tendon reflexes were normal at first; as the case went on the investigation of their condition was prevented by his downward progress. He got phlebitis of the superficial veins of the left leg, with a rise of temperature on October 23 to 101·5°. The limb became œdematous, and he no longer could be placed standing, or even sitting on the edge of the bed.

On November 6th his faculties had greatly failed, yet he recognised his brother; but next day he recollected nothing of his visit.

On November 13th the veins of the right leg became obstructed, and the limb œdematous.

His urine was throughout normal, and his bowels constipated. Towards the end of his life he passed under him both urine and fæces. He had some five or six attacks of convulsion, in which his left lower limb twitched, his eyes turned up, and his breathing was laboured.

He had pain in his head, which he referred to the occipital region, but he made no great complaint of it, and never could indicate any definite site for it.

His difficulty of swallowing increased, and I thought that some day this would bring about his death.

On the 1st of December his temperature, which had fallen after

Fig. 1.



Fig. 2.



the rises which attended the attacks of phlebitis, rose to 101° ; on December 2nd it reached 102° ; on December 3rd, 104° ; and Cheyne-Stokes' respiration coming on, he so died. He never had any impairment of power in his arms; he could move his legs about in bed until their condition of oedema rendered the motions difficult.

I failed to localise the seat of the disease of his brain. Nor could any of those who saw and examined the man suggest a site or form of disease; only one could say that progressive organic disease was present.

I could obtain a *post-mortem* examination of the cranium only, and of his scrotum, which held a simple vaginal hydrocele.

The examination of the cranium disclosed the fact that the cause of the disease was a tumour of the brain substance, which involved the convoluted surface of the right cerebral hemisphere (Fig. 1). The tumour is roughly hemispherical in shape, the base opposed to the dura mater and bone, its size about half that of a Tangerine orange; the dura mater was adherent to the surface, and all the parts of the brain showed marked signs of compression, caused by the presence of the tumour. The tumour lies directly over the fissure of Sylvius, and exhibits on the brain, stripped of its membranes, a defined and nearly circular area 75 mm. in its horizontal diameter, 70 mm. in its vertical diameter.

It obliterates the lower two-thirds of the fissure of Rolando, and involves the lower half of the ascending parietal convolution, with the exception of 10 mm. of its lower end. The whole of the ascending frontal convolution, with the exception of 25 mm. above, and 10 mm. below, is lost in the tumour.

The superior frontal convolution is not involved, but it is compressed in its hinder part. The superior frontal sulcus forms a natural boundary of the tumour.

The middle frontal convolution in its posterior half is completely obliterated, and the præcentralis inferior sulcus is gone.

Of the other parts of the inferior frontal convolution the "cap" of Broca, or the pars triangularis (*i.e.*, the portion between the ascending and anterior horizontal limbs of the fissure of Sylvius), is entire; the orbital part is entire; the pars basilaris, between the ascending limb of the Sylvian fissure and the præcentralis, is slightly involved in its upper and back part, and is compressed throughout.

In this detail of the parts involved, those familiar with the

admitted sites of the centres of volition governing the left upper limb will see that these and those of many other parts of the left side of the body, are destroyed; but never during life was there any paralysis of the limbs. How are such facts to be reconciled with our present views of cerebral localisation?

I have not as yet made the histological examination of the tumour, as the specimen has been prepared with a view to the demonstration of the more important question of its size and relations to the motor area of the cerebral hemisphere. The tumour is probably a sarcoma; it has undoubtedly arisen in the structure of the pia mater and has compressed the convoluted surface (Fig. 2).

N.B.—The microscopic examination has established the diagnosis of the tumour as a sarcoma since its presentation to the Pathological Section.

ART. XVII.—*On Massage in the Treatment of Fractures, Dislocations and Sprains.*^a By KENDAL FRANKS, M.D. Univ. Dubl.; Ex-Schol. Trin. Coll. Dubl.; Fellow and Member of Council, Royal College of Surgeons; Surgeon to the Adelaide Hospital; Surgeon-in-ordinary to his Excellency the Lord Lieutenant.

BEFORE recording at this meeting of the British Medical Association my experience as to the results produced by massage in the treatment of fractures, dislocations, and sprains, I think it would be well shortly to consider its *modus operandi*, for I believe that when the subject is investigated with an unprejudiced mind, we cannot but come to the conclusion that the employment of massage in selected cases of these lesions is based upon sound physiological principles, and that it is not fair to stigmatise it as empirical, or to condemn its use as an attempt to introduce quackery into the domains of legitimate medicine.

That massage, combined with absolute rest, seclusion, and hyperfeeding, is capable of producing the most remarkable results in that class of diseases which are grouped together under the term neurasthenia is conceded on all sides, and the accumulated experience of competent observers has placed this beyond all doubt. With this use of massage I do not wish to deal. I would call attention now to the value of massage, pure and simple, as a local

^a Read before the British Medical Association.

remedy in local lesions, as contradistinguished from its general use in general or systemic affections. The first group of cases, and to some extent the most important, to which I would refer are fractures.

It will be most convenient for the moment to consider the condition we find in a simple fracture, where there is little or no tendency to displacement. In addition to the broken bone there is always more or less laceration of the soft parts, the result of which is more or less extravasation of blood. In addition to this, and subsequent to it, inflammatory exudation takes place, and lymph is poured out between the divided ends of the bone and in their neighbourhood round about. Now, for the repair of such a fracture the first and chief element in the treatment consists of absolute rest. Then we must see that the circulation in the limb is unimpaired, that not only shall the nourishing plasma of the blood reach the parts without let or hindrance, but that the efferent flow, not merely in the veins, but, more important still, that in the lymphatics, shall be sufficiently active. But where we secure absolute rest in a fracture by means of splints, do these conditions as to the lymphatic current hold? Certainly they do not. The œdema of the limb, either at the seat of fracture or below it, sufficiently proves this, and the reason is obvious. In the first place, the lymph channels in the neighbourhood of the fracture are, so to speak, clogged with extravasated blood and the products of inflammation, so that the normal flow of the blood plasma and the waste products is impeded, with the result that these fluids accumulate in the meshes of the tissues and give rise to œdema. In the next place, we must bear in mind that the chief force which causes circulation in the lymphatics is supplied by muscular contractions. Every time the muscles contract the lymphatic channels between their fibres are, so to speak, squeezed. These vessels are studded along their course with valves, hence when they are squeezed the fluid within them cannot go backwards—it must move onwards. The rest, otherwise so necessary for repair, removes this compelling influence, and there is little left to take its place but the pressure of the accumulated fluids behind and the influence of gravity when the limb is elevated. As an illustration of this I may remind you of the frequency of œdema in a paralysed, but otherwise uninjured, limb.

In spite of these unfavourable conditions fractures unite, and very frequently the result leaves little to be desired. But some-

times, and by no means infrequently, long after the bones are firmly knit, stiffness in the limb continues, and movement is accompanied by more or less pain. In the case of a fracture in the neighbourhood of a joint even more disastrous consequences may ensue, such as, for instance, permanent rigidity of the articulation. This is by no means an infrequent result in Potts' fracture, and it is commonly enough seen as a consequence of Collis's fracture of the lower end of the radius.

The reason of this is easily explained. In order to procure union between the ends of a broken bone the usual practice is to set the limb, and then to maintain it in the correct position by means of properly adjusted splints. To obviate the occurrence of œdema the return flow of the venous blood and of the lymphatic streams is encouraged by elevation of the limb; and these conditions are maintained until we have reason to believe that repair has sufficiently advanced to alter them. Elevation of the limb may be dispensed with early, as in the case of a fracture of the leg, by encasing the parts in a starch, silicate, or plaster-of-Paris bandage and allowing the patient up on crutches. But the removal of the splints, whatever material they may be made of, does not take place until we believe that the union of the parts is firm—that is to say, at the earliest, six weeks to two months, and frequently at a later date still.

Now, under this routine treatment of a fracture, whilst union of the broken bone is well provided for, practically no provision is made for the removal or absorption, as we call it, of the extravasated blood and of the superfluous portions of the inflammatory exudations. The powerful influence of muscular contraction is invariably lost on account of the necessity of maintaining absolute rest; and it is only the more fluid portions which take advantage of the inclined plane afforded by elevation of the limb. The result naturally is that the extravasated blood gradually becomes organised, and replaced by fibrous tissue forming bands or adhesions between the various soft structures or between them and the bone, giving rise to impairment of that free muscular movement upon which the perfect functions of the limb depend. In the case of a fracture in the neighbourhood of a joint these adhesions form between and around the contiguous ends of the bones, and the joint may become rigidly ankylosed, or its movements, at any rate, greatly restricted. How often have we found it necessary, say in a Collis's fracture, after repair is complete, to place a

patient under an anæsthetic in order to break down adhesions which have formed, or, at any rate, if we do not do it for him, he repairs to a bone-setter, who does not hesitate to inform the patient that it is all due to the mismanagement of the surgeon.

Now, what I wish to point out is this, that the formation of these adhesions may be obviated by an early resort to the aid of massage. There are certain fractures which lend themselves particularly to this method of treatment, such as fractures of one of the bones of the leg or forearm where the other bone acts as a natural splint to prevent displacement; or transverse fractures of the humerus or femur, or of both bones of the leg or forearm. In all such cases the temporary removal of the splints for the purposes of massage is fraught with no difficulty or risk.

The first case of fracture in which I employed massage was a case of a transverse fracture of both bones of the leg, about the junction of the middle and upper third, in a boy aged ten. The method I adopted was this:—The limb was placed on a straight posterior splint, and it was fixed to this by a many-tailed bandage. Every day the many-tailed bandage was undone without disturbing the limb or removing the splint, and the limb from the toes to the knee was systematically massaged. I was surprised to see how soon gentle but firm pressure could be tolerated, both above and below the seat of fracture; very gentle pressure was exercised over the region of the fracture itself until union was well advanced. The boy was able to put his foot to the ground before the end of the third week, and was able to walk without the help of stick or crutch before the fourth week was ended.

One of the most important functions of massage in these cases is this, that it supplies mechanically the squeezing force to the lymphatic channels which the muscular contractions ought to supply were they able to do so. But it does more than this. I believe it breaks up and disentangles the blood clots, and forces them into the lymphatic vessels. It exerts the same power over the lymph, blood plasma, and waste products, and thus prevents the formation of adhesions which would otherwise occur. But experience shows that it does much more: it stimulates the circulation in the part, and thus hastens the process of repair—the rapidity with which a properly masséed fracture unites is very remarkable; it relieves pain. Some surgeons think that massage must necessarily increase the pain experienced by the subject of a fractured bone. This is not the case. Some forms of so-called

rubbing undoubtedly would do so, and in unskilful hands more harm than good might result; but the argument now is in favour of massage properly performed. The pressure, at first almost insensible, is gradually increased, and as the swelling subsides, and tension is relieved, a wonderful feeling of ease and comfort is produced. I speak from very personal experience, as I shall immediately explain.

A somewhat similar case to that already mentioned was that of a boy, aged fifteen, who on the 16th of March, 1890, sustained a transverse fracture of both bones of the leg by striking the limb against a plank of wood whilst running. I placed the leg in a box-splint, and when the sides were let down the limb could be massaged easily without in any way disturbing the fragments. On the 22nd day of the treatment he could raise the leg from the bed with ease. On the 26th day I exhibited him at a meeting in Dublin of the Royal Academy of Medicine. He took off his trousers, and without support or assistance of any kind he walked down a corridor and into the hall where the meeting was held.

In cases such as these the chief thing gained by resorting to massage is an economy of time. Both these cases were fracture of both bones of the leg, and both could walk without assistance between the third and fourth week. I think we may say the period of recovery was reduced by one half.

In fractures in the vicinity of joints more than a saving in time is effected. It prevents the joints becoming stiffened, or their subsequent movements being impaired by the formation of adhesions. This is of far greater importance even than the economy of time. I will quote just one illustration, because in this case massage was not employed until 18 days had elapsed since the receipt of the injury. It was a case of Potts' fracture of the lower end of the fibula, with dislocation outwards of the foot, and complete rupture of the internal lateral ligament of the ankle-joint. The deformity was reduced in the country, and the limb put up in a Dupuytren's splint. He was not sent up to the Adelaide Hospital until nearly a fortnight had elapsed. The man was aged thirty-two. The parts were in excellent position, but the ankle-joint and foot were swollen, and tension and pain were extreme. On the 19th day massage was begun—the splint being removed for the purpose, and re-adjusted immediately afterwards. The time occupied on each occasion was from twenty minutes to half an hour. On the 18th day of this treatment—that is, on the

36th day from the receipt of the injury—the patient was able to put his foot to the ground, and five days later he could walk perfectly, without a limp. The joint was freely movable and quite painless. This case illustrates that by recourse to massage not only is the time expended in treatment materially shortened (in this, the duration from the date of the accident being just forty days), but that the restoration of the functions of the parts is more perfect in the time than can be obtained by any other method of treatment with which I am acquainted.

In oblique fractures of the shaft of a bone I have found that massage can be also availed of and with equally good results. Thus in the case of an oblique fracture of the shaft of the femur, about its middle third, in a child, where there was considerable overriding of the fragments, I employed the following expedient:—A stirrup was secured to the leg above the ankle, and to this a string was secured, which passed over a pulley at the end of the bed. To the free end of the cord weights were suspended, until at the end of twenty-four hours or so the muscular spasm was overcome, and the natural length of the limb restored. A long external splint was secured above by a bandage round the thorax, and below by a many-tailed bandage to the limb. Each day the splint was removed without disturbing the patient, and massage of the limb practised on each occasion for about twenty minutes, extension being kept up all the time by the weight and pulley. The treatment occupied a month, and the result was all that could be wished.

In compound fractures I have not employed this method, nor do I think it would be advisable to make any such attempt, unless we were first able to secure complete asepsis of the injured parts and healing of the wound. Neither have I tried it in fractures of the patella or olecranon.

In dealing with sprains I have found no treatment to be compared with massage for the relief of pain, for the rapid reduction of tension and swelling, and for the quick restoration of all the normal functions of the parts. I could quote a large number of cases in support of this assertion, but I shall content myself with one which to me has this particular point of interest, that I was myself the sufferer, and consequently experienced in my own case the results immediate and remote of this method of treatment.

On the 15th of April, 1890, as I was running down stairs in the evening, I tripped and fell, spraining the right ankle badly, and

partially dislocating the astragalus forwards. The pain was intense and was followed by severe rigors, lasting for nearly two hours. Next morning the dislocation was reduced by Mr. Philip C. Smyly. Massage was begun twelve hours after the receipt of the injury, and was repeated twice a day for a fortnight. The swelling had completely disappeared in three days. In ten days I was able to walk without a limp, so that it would have been impossible to tell by the gait that the ankle had been recently injured. At the end of a fortnight I had so well recovered that I resumed all my work, and massage was discontinued. During this period no other treatment was used, except the support of an elastic bandage round the ankle whilst walking.

In contradistinction to this result, I would mention the case of a lady who consulted me on the 17th of May, 1890. She had jumped out of a carriage on the 20th of January, and sprained her ankle. It was treated by leeching and rest at first, then by the application of a starch bandage, and subsequently by liniments, lotions, and bandaging. She had not been able to put her foot to the ground for ten weeks, and when I saw her first, nearly four months after the accident, she walked with considerable difficulty and pain. There was then no swelling, but all the movements of the joint were greatly restricted. I advised massage, and at the end of three weeks she was quite well and able to walk without pain or the slightest limp.

I need not multiply examples, but I may say generally that experience has shown me that in sprains, if taken in hands at once, a cure may be effected in from ten days to a fortnight; slight sprains in even a few days; but even in severe sprains, although some weakness may continue for some weeks, the power to walk freely and painlessly is restored in a short time, rarely exceeding a fortnight. If the treatment be delayed until adhesions have formed, massage will be required for a longer time; and if the adhesions have had time to become firm, it may be necessary to rupture them under an anæsthetic before massage can be expected to be of much avail.

What has already been said regarding fractures and sprains applies equally to dislocations. Once a dislocation has been reduced, the inflammation resulting in and around the joint may prevent the patient from allowing those movements to take place, upon which so much of the ultimate utility of the joint depends. Nor can we wonder at it, when we recollect how extremely painful

such movements may be. By early resort to massage in such a case the inflammation and swelling are rapidly reduced, and movements in a few days lose their painful character, and by the time union of the torn tissues has taken place we find the limb has regained its accustomed mobility.

In conclusion, I may add that I believe the earlier massage is employed in these cases the better. Where the local tension and tenderness are extreme, far from these being contra-indications to its use, I believe that no system of treatment will afford such rapid relief as the method I am now advocating. It is in just such cases that the skill of the operator will be seen. In my own case I could not bear the pressure of the bed-clothes, and I confess I felt some hesitation as to whether I should be able to bear the manipulations, but after massage had been used for a few minutes I was perfectly satisfied on this point, and can only assure you that I did not believe it possible to experience so much relief in such a short space of time.

ART. XVIII.—*Corrected Death-rates in the Great Towns.* By
SIR CHARLES A. CAMERON, M.D.; Medical Officer of Health
for Dublin.

THE recent Census has shown that the population of the great English towns has been over-estimated during the period 1881-90; consequently their death-rates have been under-estimated. The population of Belfast, on the contrary, has been under-estimated. I have corrected the death-rates of the principal towns for the years 1881-90 by the light afforded by the Census of 1891.

CORRECTED DEATH-RATE FOR DUBLIN.

It is possible that two towns having the same death-rate per 1,000 persons living in them may not be in the same sanitary condition. The death-rates must be corrected by certain factors. These factors are founded on the relative numbers of the sexes, and of the population distributed into different groups, according to their ages. It is evident that at certain periods of life there is a greater mortality than at other periods. The larger the number of persons at the ages, say 10 to 40, the greater will be the vitality of the population. It is found, too, that females live longer than males; it follows, then, that a population composed chiefly of

females will have, *cæteris paribus*, greater longevity than one in which males predominated. In England the recorded death-rates are corrected by factors founded on the distribution of age and sex in the different registration districts. I have made this correction for Dublin, Belfast, and Cork.^a The following shows the recorded and corrected death-rates for these cities:—

			Recorded Death-rate	Corrected Death-rate	Difference
Dublin	-	-	25·3	28·0	2·7
Belfast	-	-	26·8	30·8	4·0
Cork	-	-	26·1	28·5	2·4

As there were 53 weeks in the registration year 1890, I have allowed for the intercalary week.

Dublin is more favourably circumstanced than any great English town, except Manchester and Oldham. It is more favourably circumstanced than Cork, and less so than Belfast. If, therefore, the recorded death-rate was the same in Belfast and Dublin, the latter city would be in the more satisfactory condition. It will be sufficient to compare Dublin and Belfast with England and Wales. In 1881 the age distribution in those places was as follows:—

		England and Wales	Dublin	Belfast
All ages	-	1,000·00	1,000·00	1,000·00
Under 5	-	135·55	108·61	123·05
5 to 20	-	327·05	289·43	326·03
20 to 40	-	295·02	345·78	332·28
40 to 60	-	158·60	183·63	156·43
60 and upwards	-	73·78	72·55	52·21

The correct death-rate for the English towns is, I find, in reality 24·1 and not 22·75.

The death-rate of many of the English towns has been understated for the period 1881–90, as the recent Census (April, 1891) has shown that the population has been over-estimated. The following Tables show the actual death-rates in populations, the numbers of which I have in each year estimated from the results of the Census of 1891—that is, I have re-calculated the death-

^a Belfast population was under-estimated in 1881–90; the annual increase was 2·5, but it was only estimated at 1·3 per cent. The population of Dublin was slightly under-estimated, and that of Cork over-estimated. The figures have to be revised, but I adopt them in the present paper.

rates by the light afforded by the late Census returns. This is important, because it shows that Dublin and Belfast do not compare quite so unfavourably with the English towns as has been stated. Belfast population was under-estimated considerably; it increased 25 per cent. between 1881 and 1891, but the increase was estimated to be only 13 per cent. The population of Dublin was slightly under-estimated.

Recorded and Corrected Death-rates per 1,000 in 28 Great Towns in 1890.

TOWNS in the order of their Corrected Death-rates				Recorded Death-rate	Corrected Death-rate	Comparative Mortality Figure
ENGLAND AND WALES -	-	-		19·19	19·19	1000
ENGLAND AND WALES, LESS THE 28 TOWNS -	-	-	}	18·19	17·79	927
28 Towns -	-	-	-	21·35	22·75	1186
Nottingham -	-	-	-	16·47	17·46	910
Brighton -	-	-	-	17·76	18·29	953
Leicester -	-	-	-	17·92	18·77	978
Derby -	-	-	-	18·51	19·25	1003
Hull -	-	-	-	19·25	19·86	1035
Bristol -	-	-	-	19·21	19·88	1036
Norwich -	-	-	-	21·06	20·14	1050
Portsmouth -	-	-	-	19·59	20·18	1052
Huddersfield -	-	-	-	18·98	20·84	1086
Birkenhead -	-	-	-	19·69	21·06	1097
London -	-	-	-	20·30	21·55	1123
Birmingham -	-	-	-	20·74	22·12	1153
Plymouth -	-	-	-	22·42	22·20	1157
Wolverhampton -	-	-	-	21·82	22·50	1172
Bradford -	-	-	-	20·39	22·52	1174
Cardiff -	-	-	-	20·76	22·53	1174
Oldham -	-	-	-	21·23	23·56	1228
Sunderland -	-	-	-	22·72	23·66	1233
Leeds -	-	-	-	22·63	24·19	1261
Salford -	-	-	-	22·36	24·34	1268
Halifax -	-	-	-	22·46	24·40	1271
Blackburn -	-	-	-	23·47	25·58	1333
Liverpool -	-	-	-	23·55	25·84	1347
Sheffield -	-	-	-	24·93	26·81	1397
Newcastle-upon-Tyne -	-	-	-	25·87	27·38	1427
Bolton -	-	-	-	25·78	28·25	1472
Preston -	-	-	-	27·43	29·79	1552
Manchester -	-	-	-	30·57	34·06	1775

28 Large English Towns, 1881-1890.

TOWNS				Recorded Death-rate	Corrected Death-rate	Zymotic Death-rate
28 Towns -	-	-	-	21·6	23·0	3·1
London -	-	-	-	20·5	21·8	3·0
Brighton -	-	-	-	18·5	19·0	2·2
Portsmouth -	-	-	-	19·0	19·6	2·7
Norwich -	-	-	-	20·0	19·1	2·4
Plymouth -	-	-	-	21·4	21·2	2·5
Bristol -	-	-	-	19·3	20·0	2·1
Wolverhampton -	-	-	-	21·7	22·4	2·6
Birmingham -	-	-	-	20·8	22·2	3·0
Leicester -	-	-	-	20·6	21·6	3·1
Nottingham -	-	-	-	21·5	22·8	3·0
Derby -	-	-	-	18·6	19·3	2·1
Birkenhead -	-	-	-	19·9	21·3	2·5
Liverpool -	-	-	-	26·3	28·9	4·1
Bolton -	-	-	-	22·4	24·5	3·4
Manchester -	-	-	-	26·6	29·6	3·5
Salford -	-	-	-	24·5	26·7	4·3
Oldham -	-	-	-	23·9	26·5	2·7
Blackburn -	-	-	-	24·8	27·0	3·8
Preston -	-	-	-	26·5	28·8	4·9
Huddersfield -	-	-	-	20·8	22·8	2·0
Halifax -	-	-	-	21·2	23·0	1·6
Bradford -	-	-	-	20·4	22·5	2·4
Leeds -	-	-	-	22·1	23·6	3·2
Sheffield -	-	-	-	22·0	23·7	3·5
Hull -	-	-	-	21·0	21·7	3·1
Sunderland -	-	-	-	22·7	23·6	3·4
Newcastle-upon-Tyne -	-	-	-	22·5	23·8	2·9
Cardiff -	-	-	-	20·7	22·5	3·1

Re-calculation of Death-rates in English Towns.

YEARS	LARGE ENGLISH TOWNS		
	Recorded Death-rate	Corrected Death-rate	Zymotic Death-rate
1876-1880 -	23·3	24·8	3·8
1881-1885 -	21·9	23·3	3·3
1886-1890 -	21·2	22·6	2·9
1881-1890 -	21·6	23·0	3·1
1881 -	21·8	23·2	3·4
1882 -	22·4	23·9	3·6
1883 -	21·9	23·3	2·9
1884 -	22·1	23·6	3·6
1885 -	21·1	22·5	2·8
1886 -	21·6	23·0	3·0
1887 -	21·6	23·0	3·3
1888 -	20·1	21·4	2·5
1889 -	20·3	21·6	2·9
1890 -	22·6	24·1	2·9

Re-calculation of Death-rates in Dublin, Belfast, and Cork.

YEARS	DUBLIN			BELFAST			CORK		
	Recorded Death-rate	Corrected Death-rate	Zymotic Death-rate	Recorded Death-rate	Corrected Death-rate	Zymotic Death-rate	Recorded Death-rate	Corrected Death-rate	Zymotic Death-rate
1876-1880 -	29·5	32·6	5·1	26·0	29·8	?	30·8	33·7	?
1881-1885 -	27·4	30·3	3·1	24·7	28·4	3·5	26·0	28·4	2·9
1886-1890 -	26·2	29·0	2·9	24·4	28·0	3·0	24·3	26·6	1·8
1881-1890 -	26·8	29·6	3·0	24·5	28·1	3·2	25·1	27·4	2·4
1881 -	26·5	29·3	2·6	23·5	27·0	2·4	26·3	28·7	4·0
1882 -	27·3	30·2	3·5	25·1	28·8	3·9	24·4	26·7	2·3
1883 -	28·5	31·5	3·2	25·7	29·5	3·8	25·3	27·7	3·6
1884 -	26·8	29·6	3·3	21·8	25·0	2·5	26·8	29·3	2·6
1885 -	27·8	30·7	3·2	27·0	31·0	4·8	27·0	29·5	2·1
1886 -	26·3	29·1	2·7	22·7	26·1	1·8	22·9	25·0	0·9
1887 -	29·9	33·1	4·6	24·6	28·2	3·4	23·4	25·6	1·6
1888 -	24·5	27·1	2·8	23·8	27·3	2·8	25·4	27·8	3·5
1889 -	24·9	27·5	2·3	24·1	27·7	2·6	23·6	25·8	1·9
1890 -	25·3	28·0	2·0	26·8	30·8	4·4	26·1	28·5	0·9

Since the foregoing was put into type it has been discovered that the population of Dublin is about 10,000 less than the enumerators' figures made out. This will add about 0·3 per cent. to the death-rate, if finally confirmed.

ART. XIX.—*How is a Knowledge of Medicine obtained?*^a By RICHARD FRANCIS TOBIN, F.R.C.S.I.; Surgeon to St. Vincent's Hospital.

It is to-day my turn to give the Address introductory to the Medical Session that has just begun.

I could not do so without trepidation before the many visitors who have honoured us with their presence, men distinguished in every profession and in every branch of literature and science, did I not know that they are here not so much to listen to what I may have to say as to impress upon you the importance of the work upon which you are entering.

Taking this view of the situation, it will be my endeavour during the short time that I shall detain you, to forget the presence of all but the pupils of this hospital, so that I may be able to speak in the plainest terms I can command.

^a Address delivered at St. Vincent's Hospital on Tuesday, October 20, 1891.

Before, however, proceeding to the main object of my discourse, I wish to say to our visitors, "We sincerely thank you for coming here"—to our former pupils, "Welcome back"—to our new pupils, "Persevere"—to our prize-winners, whose names have been inscribed on our board, "Go on, and add more laurels to those you have already won."

With reference to the board just mentioned, I never look at it without feeling regret that its existence has been of such recent date. Were it otherwise, some of the students now listening to me would have the pleasure of reading upon it their fathers' names, and we would all of us be reminded how many men, now famous, have studied within these walls.

At the hospital with which I was connected before coming here—the Royal Victoria Hospital, at Netley—there is a board with a goodly show of names, those of the men who have got first place at the conjoint examinations for the Army and Indian Medical Services. It was with mixed feelings of pleasure and pain that, when lately looking over some documents of this hospital, I came across prize-winners of whose names we have made no public record, but which hold a proud place on the board to which I have referred. With one of them an incident is connected which you may care to hear. Let me mention at the outset that there is a good deal of rivalry at the Netley examinations as to whether Ireland, England, or Scotland gets first place, also that a part of the examination consists in the recognition of specimens taken from the Pathological Museum.

On the evening previous to the examinations Mr. Sweeney, a Vincent's man—who, of the Irish candidates, was first in the betting—received a letter, saying:—

"DEAR SIR,—The specimens you will be shown to-morrow are so-and-so (giving their names, taken from the catalogue in the Museum). You may tell this to any other Irishman, but please do not tell the English or Scotch.

"Your humble servant,

"LAURENCE MURPHY,

"Porter to the Museum."

Mr. Sweeney, on receiving the letter, brought it to me, and asked what was to be done. We thought over it a good deal, and came to the conclusion that there was nothing for it but to communicate with the Professor concerned, and have the specimens changed. This was done, and Mr. Sweeney took first place purely on his merits.

It did not, however, fare so well with poor Murphy; he alone

could be the offender, so it was useless to conceal his name. We did what we could for him, but he had to give up his place as Museum porter and return to the ranks. I often think of him and his simple undiluted love for Ireland; after twenty years of strict discipline and a world-wide experience, risking all he had for what *he* considered the honour of the Old Country. Alas! for patriotism. Does its flame ever burn purely without hurting him who tends it unselfishly?

To anyone who has adopted the profession you have—or, indeed, to the community at large—no subject is more important than how a knowledge of medicine can best be obtained. You have embarked on a life-long voyage, and it goes without saying that you take an interest in the course you are to steer. The most noticeable incident about steering is to my mind the restlessness of the man at the wheel. Which of us as he stood on the deck of a steamer has not wondered as he has seen the weather-beaten sailor, in whose hands are the lives of all on board, twist the wheel now hard round in one direction, and then in a few minutes, without any apparent cause, with sudden energy take it back in exactly the opposite direction, as if he had previously made some huge mistake and immediate shipwreck were imminent? However, we have not to make many voyages before we discover that this apparently eccentric action on the part of the helmsman results in our steaming safely into port. I therefore now want you to have a look with me at our chart and compass, and if you are not satisfied with our course to lend a hand at the wheel till the head of our ship has been made right.

To make my case clear, I will state it at the outset.

I say that pure and simple bedside observation of disease is being shoved on one side by science, and that medical education is suffering in consequence.

Now, how is a knowledge of medicine obtained?

It has to be obtained by methods, partly scientific and partly empirical.

Although no one possessing a diploma that I have heard of has ever attempted to confine himself *altogether* to either method, I propose to consider each separately, so that we may judge of their relative merits and utility.

Let us take science first. By it I mean knowledge referred to general truths and principles on which it is founded and from which it is derived. When left to itself—and it is always trying to work alone—science instructs you thus:—First, it gives an under-

standing of the structure of the human body through descriptive anatomy and histology. Its manifold actions when these are being efficiently performed are then observed, and physiology elucidates them for you by the application of the laws of physics and chemistry. Having thus got an insight of the human mechanism and its working when in an efficient state, and having also studied the nature of various remedies, you approach cases in which there is a disturbance of the economy; you gauge its nature and degree by appliances of great accuracy, and having done so, you apply for its correction the remedies that seem to you most suitable.

Now, gentlemen, if I have made you clearly understand this educational system you will, no doubt, say that, provided it is carried out thoroughly and completely, nothing more excellent could be devised.

It is, therefore, with hesitation I tell you—hesitation overcome by the fact that I know every physician of experience present here will bear me out in what I am about to say—that a man so instructed and believing in his science so that he would never lay it aside, but would always enforce in the hospital what he had experimentally learned in the laboratory—such a man would be an unsuccessful, at times even a dangerous practitioner.

Let us now pass on and see what the second method—that which I have styled empiricism—can do, first saying that *by it* I mean observation pure and simple, or, to be more precise, the pursuit of knowledge by experience and observation alone, without due regard to science and theory.

That we may form an idea of what it can effect when left altogether to itself, I will take you away from the hospital—for we never proceed here on purely empirical lines—and ask you to come with me to a horse-dealer's yard. As we enter, observe in the archway a man in gaiters and a buttoned tweed coat. He is digging an old ashplant in between the stones, and from the corners of his eyes he catches a glimpse of us and of a horse that is being led in at the same time.

Now, gentlemen, with that casual glance that man has accurately measured both us and the horse. Of the latter's value and soundness, I would rather take his opinion than I would that of a brand new vet., with a head crammed full of all the "ologies" in the biggest volumes in Fannin's or M'Gee's.

Think seriously how did this man come by his knowledge?

He has less acquaintance with anatomy and physiology than a

child, for the few notions he *has* on these subjects are wrong. He can scarcely read or write, and no one ever gave him verbal instruction. Yet the man is there, usefully, practically educated. I hope sincerely that each member of the Medical Council will go and try a deal with him before proceeding further with medical legislation.

It is unnecessary to tell you in what way he studied. He has liked horses and been about them ever since he was a boy. He has watched them standing up and lying down, and walking and trotting and galloping, till, unconsciously to him, they have grown into his nature. His eyes, his ears, all his senses are trained to an understanding of them. A silent sympathy with his surroundings has moulded him to what he is. He can give no reason for his opinions, but these opinions seldom are wrong.

Now, I hope that there is not one of you who supposes that I want you to study your profession altogether in the horse-dealer's fashion.

The responsibilities of the two positions are not to be compared.

Yours are such that it would be sinful to move one step without such light as science can throw upon your way. Without science, and plenty of it, you, as it were, have not your feet upon the ground. Every new theory and charlatan shoves you here and there. Fearful to move forward, your mind is filled with visions of imaginary possibilities. Ignorant of what is known, you must also be ignorant of the fact that certain things are not known, and your conscience, therefore, accuses you of shortcomings when none such exist. It is unnecessary to labour this point. Science you must have; but science at the present time can take care of itself. The reason is, it can be measured. I see here examiners in whose hands it is perfectly safe; and my contention and complaint is that, in consequence of its measurableness, it, in this age of examinations, shoves almost completely on one side that unmeasurable but nevertheless great educational force which, for want of a better word, I have styled empiricism, and for the demonstration of which I have had to take you to a horse-dealer's yard.

Under these circumstances—were the examinations your goal, did your career finish on your acquisition of a diploma—I know not what sufficient argument I could use to induce you to give to clinical studies the amount of time and attention they require.

But the race does not there end. I can, therefore, ask you to go on watching it. Watch it when it enters on its chief stage, when

men fully qualified are competing for the confidence of the public, then will you see the weary one of the hospital pass the pure scientist as if the latter were standing still.

I do not know how it is, but the man with too much science seems to have his hands tied when standing beside the sick bed. Let me say again, and yet again, that you cannot have too much science, provided you have an equal amount of hospital experience; but if you are a one-sided man, and that one side is science, you may, when face to face with disease, measure and classify with accuracy, but quick help, the one thing the patient wants of you, it will not be yours to give.

Why this is it is hard to say. Is it because the scientist is trained to fall back in difficulties on theory, and theory alone. Now, since science covers only a small part of the field of therapeutics, the man who is in the habit of going to theory rather than experience for direction, must very often find himself in the hand of a blind guide. Or is it that science, when unduly pressed, dulls some of our finer perceptions? Darwin, than whom there never lived a more accurate and truthful observer of facts, tells us that on him it had somewhat of this effect, and that as he went on with his scientific work nature lost for him its charms. When advanced in life he could not say like Wordsworth—

“The innocent brightness of a new-born day is lovely yet.”

Perhaps both causes may be at work. Powers of observation that have been trained by the constant and accurate measurement of dry facts, unsupplemented by a sympathetic watching of the sick, must often fail to recognise such disturbances as are incapable of measurement, and a practitioner who has not thoroughly studied in the wards of a hospital the power of drugs and other remedies may let lie unused in his hands forces, the use of which, as you will learn by and by, science has done almost nothing to discover, and the action of which it has done very little to explain.

It would be unnecessary for me, after what I have said, to tell you that in my opinion you should expose yourselves from the very first to the quickening and, in the truest sense, educational influence of hospital life, were it not that many, whose opinions are worthy of much respect, hold that you should not do so in your first year.

The reasons that they give are chiefly two. One, that by crowding round the beds beginners will be in the way of senior students. Well, we get over that by having a junior class on every day of the week, which we allow none but juniors to attend. The other

that during your first year you will see very many things which you cannot understand. We cannot, I regret to say, get over this second difficulty; but I can tell you that every such thing will have an educational force for you; it will quicken your desire for helpful knowledge; it will ask you a question, and when the answer comes in after-years, it will make it easy of comprehension, and will impress it on your memories.

The practice of medicine cannot be learned in a systematic fashion, let the authorities draw up what regulations they may. Sometimes the explanation will precede the phenomenon, and sometimes this order will be reversed. To most men it is easier to observe phenomena, and then seek their explanation, than to follow the order laid down in the schools; but, apart from all such questions, the objection under consideration is sufficiently answered by calling attention to how great is the area in the field of medicine altogether unreclaimed from empiricism, in which the first year's student is as free to wander as the most learned pathologist of the day.

Gentlemen, even to science itself there is no greater danger than the tendency to press it beyond its legitimate limits. Yet he who would define its bounds undertakes an ungrateful and a dangerous task. He is not unlike to one who, in a time of great political excitement, would counsel moderation and self-restraint. Like such a one, he may be turned upon and denounced as a traitor to the cause. Therefore, being somewhat pusillanimous, I shall not proceed further, but shall content myself with asking you to turn over in your minds what I have already said. Here, as in going round the wards, I can put before you only my view of the situation; you must look into it for yourselves. Here as there I am comforted by the thought that of whatever I submit to you you can learn more than I can teach you. I have addressed you as I have, because I want each one of you to form for himself at the outset of his career some idea of how he can best educate himself as a true physician, and some idea also of what such a man should be. For me he is, when at his best, a being somewhat nearer to a great poet than a great scientist—one who has not taken his brain and put it into the crucible of science, but has put science into the crucible of his brain, and got from it what wisdom it will yield. He has left his mark on science, but science has not left its materialistic mark on him. Through his eyes a boy's soul, if I may so put it, still looks out brightly on the world. He lives his own life. His hands are of all men's quickest unto good.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Pathology and Treatment of Glaucoma. By PRIESTLEY SMITH, of Birmingham. London: J. and A. Churchill. 1891. Pp. 198.

THIS is one of those rare books which it is a delight to read.

The author, in his preface, states the volume to be a revised publication, with additions, of three lectures which were delivered at the Royal College of Surgeons under the Erasmus Wilson Bequest in March, 1889, and printed in the *British Medical Journal* shortly afterwards. It contains sixty-four well-executed illustrations by the author, and twelve photo-zincographs. The first lecture, after giving a "definition of the subject," treats of "the estimation of the intra-ocular pressure," with a full description of tonometry in general, and the author's tonometer in particular. "The amount of the intra-ocular pressure" is next considered; then the "secretion and excretion of the intra-ocular fluids," and the chapter ends by briefly summarising our knowledge of these currents as follows:—

The fluids which nourish the vitreous body and lens, and fill the aqueous chamber, are secreted chiefly by the ciliary portion of the uveal tract.

The larger part of the secretion passes directly into the aqueous chamber, forwards through the pupil, and out at the filtration-angle. A very much smaller portion passes backwards through the vitreous body, and escapes at the papilla. The hyaloid membrane and zonula, which separates the two chambers, are readily permeable by the vitreous fluid.

The pressure which the fluid exerts against the walls of the chambers is equal to about 25 millimetres of mercury, and is the same, or very nearly so, in the two chambers.

The second lecture is devoted to the consideration of the "Increase of the Intra-ocular Pressure." He says: "We may safely conclude

that the chief conditions which are capable of causing persistent high pressure in the chambers of the eye are the following:—

“(a). Hypersecretion by the ciliary processes.

“(b). Serosity of the fluids.

“(c). Obstruction of the filtration-angle.”

“The evidence as to the actual causes of increased pressure in glaucoma” is then considered in detail.

The causes of secondary glaucoma are next considered, viz.:—Annular posterior synechia, perforating wounds and ulcers of the cornea with anterior synechia, dislocation of the lens into the anterior chamber, lateral dislocation of the lens, injury of the lens, removal of the lens, intra-ocular tumours, detachment of the retina, serous exudation, and hæmorrhage. “With regard to glaucoma following cataract extraction,” he says, “we can assert that there is usually a closure or blockage of the filtration-angle, although we cannot in every case ascertain the precise manner of its production, and such an obstruction can be remedied only while it is recent.”

In all these various forms of secondary glaucoma he finds changes which, in one way or another, obstruct the escape of fluid from the eye.

Lecture III. is devoted to “Primary Glaucoma.” The filtration-angle becomes closed by the iris-base being pushed forward by the ciliary processes (as Adolph Weber asserted in 1876), and adhering sooner or later, according to the degree of vascular disturbance and inflammatory action, to the opposing surface of the cornea and ligamentum pectinatum.

The predisposing causes of primary glaucoma are then considered, and evidence is brought forward to show that want of space between the crystalline lens and the parts which surround it is a frequent predisposing cause. The following facts are the most important:—

(a). The size of the lens increases throughout life.

(b). The liability to primary glaucoma increases throughout life.

(c). The liability to primary glaucoma is greatest in eyes of exceptionally small size.

(d). A disproportion between the size of the lens and the size of the globe can be demonstrated in some eyes blinded by primary glaucoma.

The next part deals with the exciting causes of primary glaucoma. Any disturbance which congests the ciliary processes or displaces the lens forwards, or thickens the iris, is apt, in a predisposed eye, to cause a dangerous compression of the filtration-angle. For

example, congestion and inflammation of the uveal tract, forward displacement of the lens, dilatation of the pupil, thickening of the iris-base.

He sums up as follows:—"The causes of primary glaucoma, then, are various and complex, and are not yet completely known; but they are alike in this: they all lead to compression of the filtration-angle. With that compression the actual glaucoma process begins. The escape of fluid is retarded, and the intra-ocular pressure rises; the increasing pressure hinders the flow of blood through the choroidal veins, and augments the swelling of the ciliary processes; this in its turn increases the compression of the filtration-angle. The fluid which still exudes from the turgid ciliary body is albuminous and less diffusible than the normal secretion; it tends to accumulate behind the lens, and this latter, being pressed forwards, intensifies the mischief. Thus cause and effect react upon each other in a vicious circle.

"In acute glaucoma we see the vascular element at its maximum, in chronic glaucoma at its minimum; in the sub-acute and intermittent forms it seems to ebb and flow under various influences which aid or embarrass the circulation in the uveal tract. The vascular element finds its complement and auxiliary—more marked in some cases, less marked in others—in the predisposing structural condition of the eye."

The consequences of increased tension are next considered:—

Edema of the cornea.

Paralysis of the ciliary muscle.

Obstruction of the circulation in the uveal tract.

Obstruction of the circulation in the retina.

Excavation of the optic disc, and changes in the size and shape of the globe.

A section on the "Principles of Treatment" concludes this lecture.

The author strongly recommends the combination of cocaïn and eserïn in such proportions that the eserïn shall have the mastery over the pupil (one grain of sulphate of eserïn, five grains of hydrochlorate of cocaïn, and one ounce of distilled water). The cocaïn serves to contract the ciliary blood vessels and diminish the sensibility of the ciliary nerves, effects which tend to lower the intra-ocular pressure.

Whilst regarding iridectomy as the most reliable operation for the relief of high tension, he thinks that sclerotomy also has its

uses, chiefly as a supplement to iridectomy when the latter fails to permanently reduce the tension; and there are some cases of exceptional gravity in which a preliminary "scleral puncture" (posterior sclerotomy), made some days before the iridectomy, offers the best, and, perhaps, the only chance of success.

"We need no longer," he says, "speak of the treatment of glaucoma as empirical, since our methods of treating this disease and our pathological knowledge are completely in accord, and mutually confirm each other."

An appendix is added giving "Statistics of primary glaucoma in relation to age, sex, and type." "Statistics of the weight, volume, and specific gravity of the crystalline lens at different times of life." "Methods of preserving and drawing ophthalmic specimens."

We heartily welcome Mr. Priestley Smith's delightful monograph. After reading the illiterate productions of ignorant plagiarists so often presented to us for review, it is like a refreshing draught to come upon the clear, admirable English in which Mr. Smith puts forward his arguments, and supports them by the results of original experiments and investigations.

The volume before us serves as a wonderful clarifier of our ideas on the whole subject of glaucoma, and will, we feel sure, take an honourable place as an English classic.

Handbook of Diseases of the Ear, for the Use of Students and Practitioners. By URBAN PRITCHARD, M.D. (Ed.), F.R.C.S., &c. Second Edition. With Illustrations. London: H. K. Lewis. 1891. Pp. 238.

THE second edition of this excellent little handbook still retains its original form and character, and although a great portion has been recast, and much new matter added, the number of pages has only been increased by 28—an announcement which we are sure will be welcome to the busy practitioner and overburdened student.

The chief alterations consist in the addition of two new chapters, one on Diseases of the Naso-pharynx—a subject which had been previously incorporated in Chapter VI.—and the other on Affections of the Mastoid and their operative treatment. Six new illustrations have been introduced; while the sections on Otomycolosis and Exostoses of the Meatus have been amplified. For the

removal of adenoid growths the author wisely, as we think, prefers the finger-nail to instruments. He does not entertain a very high opinion of cocaïn as a preventive of the feeling of suffocation which occurs during the operation, and therefore uses an anæsthetic. The sitting position in which he places the patient does not seem to recommend itself in preference to that in which the patient lies with his head hanging over the end of the couch. While admitting that much improvement has resulted of late in the treatment of ear diseases from attention to the nasal cavities, he rightly adds that there is now a tendency to over-estimate the importance of the latter.

On turning to the chapter on mastoid diseases we were disappointed to find that no indications are given as to when trephining or drilling is necessary, and the description of the method of operation is not sufficiently accurate or detailed. With these exceptions there is absolutely nothing to find fault with in the book, and we heartily recommend it.

Sterility in Women; including its Causation and Treatment. By ARTHUR W. EDIS, M.D. Lond., F.R.C.P., &c. London: H. K. Lewis. 1890. Pp. 112.

THIS book, the author states in his preface, is a reproduction, "with considerable additions," of the short account of sterility which he attempted to give in his "Manual of Diseases of Women," the second edition of which has now been "out of print some years." The work is nicely got up, and written in an easy style; but much of the teaching contained in it is inaccurate and quite obsolete at the present day. Displacements receive a large amount of attention. We find all the old ideas about *anteflexion* and its treatment—no less than seven different varieties of stem-pessaries being figured for its cure. The methods of treatment and the descriptions given of them are in many instances crude and incomplete, several important ones being altogether omitted. The author's account of the precautions necessary for *antisepsis* or *asepsis*, in carrying out the different methods, are, to say the least, vague, and would quite account for the paragraph found on p. 36, where it is stated that, after the introduction of tents, "nausea or vomiting, *heats and chills, at times occur. The pulse may increase in frequency and the temperature run up.*" No method at all is given for the sterilisation of tents! Though the author in his

preface states that the treatment of most of the important conditions preventing conception are given, we find that several important factors, such as corporeal endometritis and inflammatory lesions of the tubes and ovaries, have been passed over almost unnoticed. We fail to see the object in publishing this reproduction, and cannot help thinking that it would have redounded more to the author's credit had he completely rewritten the work, so as to bring it up to date, or else allowed it to remain, with the second edition of his "*Manual of Diseases of Women*," *out of print*.

Contributions to Practical Medicine. By Sir JAMES SAWYER, Knt., M.D. London; F.R.C.P.; F.R.S. Ed.; Consulting Physician to the Queen's Hospital; lately Professor of Medicine in Queen's College, Birmingham. Second Edition, revised and much enlarged. Birmingham: Cornish Brothers. 1891. Pp. 201.

FROM such of his medical writings as had been published in various periodicals as lectures, essays, and annotations, Sir J. Sawyer selected those which seemed to him to be most worthy of reproduction, and, having revised and amplified them, published them in 1886 as the first edition of "*Practical Medicine*." When that edition became exhausted, the author again "revised and corrected every page by whatever experience he had been able to gather during twenty-five years of busy practice in treating the sick." The outcome of all this careful preparation is this second edition.

From all this it will be seen that these essays are no hurried notes on some new and fashionable treatment, written as rapidly as possible in order to forestall rival pens—a class of medical literature of which we have seen far too much lately—but they represent the ripe experience and matured convictions of a skilful and observant physician. With regard to many of them the advice of the Horatian maxim—"nonumque prematur in annum"—has been observed, and everywhere care and thought are to be observed.

The essays touch on many important points, all of which are discussed from a thoroughly practical point of view. The first is on the subject of Insomnia. Sir J. Sawyer divides this into three sub-divisions—"psychic," "toxic," and "senile"—the first due to excessive and protracted cerebral activity, a form of sleeplessness which is most likely to occur in men of the nervous temperament. "We have lately been too ready to ignore temperaments; our

fathers studied them better and regarded them more than we do.” “A man of distinctly nervous temperament has a quick manner; he is nearly always in a hurry; he is apt to talk volubly and eat quickly; if he does not know us well he fidgets with his hands or legs when he is speaking; he talks abruptly, earnestly, and fluently, often splitting up his phrases, or recalling and correcting them. A man of this temperament is apt to overdo everything into which his feelings enter.”

“In toxic insomnia the causes of the sleeplessness act primarily on the vessels of the brain, giving rise to some degree of arterial hyperæmia. The external poisons which most frequently cause sleeplessness are tobacco, alcohol, tea, and coffee; the internal, certain waste products of tissue—metamorphosis which accumulate in the bodies of gouty persons, or of those whose kidneys act deficiently.”

“Again, there is a senile form of insomnia. You may, perhaps, have observed among your friends that an exaggerated appreciation of the merits and value of early rising mostly increases as age advances. The sleeplessness from which many old people suffer is mainly, if not entirely, the result of senile degeneration of the smaller cerebral arteries. Those vessels are less elastic and less contractile than in health, and their weakened walls often lead to their permanent dilatation.”

There is another important essay on Constipation and Intestinal Obstruction. These terms do not merely differ in degree; “they apply to different extents of the intestinal tube. Constipation concerns the large intestine only; intestinal obstruction the whole of the intestines, small as well as large. Constipation is slow fæcal progress in the large intestine, where alone true fæces are to be found. Intestinal obstruction is a grave disturbance of intestinal permeability in any part of the intestinal canal.” With regard to the treatment of constipation, Sir J. Sawyer’s favourite remedy is Socotrine aloes; he has little faith in belladonna, and none in nuxvomica. He gives one, two, or three grains of aloes in a pill, combined with a quarter of a grain of sulphate of iron, and one grain of extract of hyoscyamus at bedtime every night.

In the severer forms of fæcal retention much weight is laid on the careful use of the long tube of O’Beirne. “Never entrust it to a nurse. The efficient passage of the instrument into and through the sigmoid flexure of the colon is a difficult and delicate operation which the medical attendant ought always himself to

perform for his patient." We are quite at one with Sir J. Sawyer as to the dangers which may arise from the unskilled or careless employment of this instrument; but we must confess to have doubts as to whether it can be passed through the sigmoid flexure in any but a very small proportion of cases indeed. Unless the sigmoid flexure be unusually short and straight, we believe that the tube merely pushes a loop of the flexure before it, and does not pass through it at all. We must quote a sentence on the proper size of an aperient enema. "The quantity of an aperient injection is precisely so much of it as can be passed into the bowel without undue force." A better or more easily remembered rule for nurses or students could not be given.

Space forbids us quoting largely from the other essays. The subjects treated of are of great importance—Phthisical Laryngitis, Floating Kidney, Gastralgia, the Accentuation of the Pulmonary Second Sound, &c., and are all well worth reading and studying. Everything is discussed from a practical point of view. No one will read these essays without gaining valuable hints therefrom. We recommeud these essays to all our readers.

Le Traitement des Suppurations Pelviennes et des Lésions inflammatoires des Annexes par l'Hystérectomie vaginale. Par S. POZZI, Professeur agrégé à la Faculté de Médecine de Paris, Chirurgien de l'hôpital Lourcine-Pascal. Paris: Imp. des Arts et Manufactures, 12 Rue Paul-Lelong. 1891.

AN extract from the *Gazette Hebdomadaire de Médecine et de Chirurgie*, in pamphlet form, in which the author defends the position he has taken up in expressing his disapproval of the treatment of pelvic suppurations and inflammatory lesions of the uterine appendages by vaginal hysterectomy—a method of treatment introduced by M. Pean, and advocated by M. Segond.

The three principal arguments which have been put forward in favour of this operation by its supporters, who claim that it is preferable to laparotomy in the treatment of inflammatory lesions of the appendages, are:—1st. *The absence of the abdominal cicatrix*; 2nd. *The lesser gravity of the operation*; 3rd. *Its superior efficacy*. M. Pozzi inverts the order of these, considering that the first, which affects the beauty of the opérées, ought to have infinitely less weight with the surgeon than the other two, which concern the life of the patient. He then treats each of these

three arguments singly in his usual clear and vigorous style, upholding the practice of laparotomy against that of vaginal hysterectomy in the treatment of these affections.

In treating of the gravity of the two operations, he compares the results of M. Bouilly's operations with those of M. Segond. The former, out of 33 laparotomies "*for pyosalpinx*," has had 4 deaths; the latter, out of 23 hysterectomies "*for pyosalpinx and other lesions of the tubes and ovaries*," has had 4 deaths. M. Pozzi points out that, as far as these statistics go, laparotomy has the superiority—a superiority which undoubtedly would have proved still greater had M. Bouilly classed with his operations for pyosalpinx those for other lesions of the tubes and ovaries, or, inversely, had M. Segond eliminated these latter.

The author then relates his own experiences during the past two years. During a period dating from February 1st, 1889, up to March 10th, 1891, he operated on 39 cases of pyosalpinx and pelvic abscess. Many of these, he says, belonged to that class of pelvic peritonitis in which Segond and Reclus represent the pelvis as being like a sponge full of pus, a sort of *noli me tangere* where one ought not to think of a laparotomy. Out of these 39 cases he had 3 deaths. All the recoveries have been complete and seem to be permanent.

These results, when compared with those obtained by M. Segond, at once prove their superiority, and this superiority would show itself to be still more pronounced if, instead of limiting himself to cases of pelvic suppuration, he had massed together all his operations for inflammatory lesions of the appendages, where, according to the practice of M. Segond, hysterectomy would undoubtedly have been performed. The total number of all these cases operated on during a period of two years and two months amounted to 84, with 80 recoveries and 4 deaths—a proportion of recoveries which far surpasses those of M. Segond obtained by hysterectomy in his series of analogous cases. Furthermore, he points out the far greater facility of access to the parts provided by an abdominal section, aided, if necessary, by such procedures as evisceration and elevation of the pelvis, and also that laparotomy is an operation of control which allows one to rectify at the time the errors or uncertainties of diagnosis. Hysterectomy, on the contrary, is an operation of certainty which supposes infallibility of diagnosis, for in it no exploratory incision can be made. The first cut of the knife, and the patient is doomed to be sterile.

In conclusion, M. Pozzi reminds his readers that the abdominal incision required in these cases is usually a very small one, as recommended by Lawson Tait, and advises suturing of the incision *par étages*. He himself has used this method for the past four years, and by it he has always obtained a firm linear cicatrix, thus obviating any chance of subsequent hernia or even the use of an abdominal belt. The perusal of this short pamphlet is strongly to be recommended to all operating gynæcologists.

Illustrations of the Inductive Method in Medicine. By WILLIAM MURRAY, M.D., F.R.C.P. Lond.; Consulting Physician to the Children's Hospital, &c., &c., Newcastle-on-Tyne. London: H. K. Lewis. 1891. Pp. 158.

MOST of the essays comprised in this volume have been published before. The longest and most important of them are a plea for the fuller use of the inductive method in ordinary medical practice—a plea for “the study of those principles whereby the large mass of material accumulated by researches in pathology and therapeutics may be arranged and classified and lead to the discovery of some general law or laws. Impressed by the idea that the time has come for many such generalisations, I have endeavoured in the following papers to illustrate what might be done by seeking for general principles in the daily occurrences of practice.” “The mind of the profession has been so intent on the discovery of individual facts that the importance of reading their collective meaning has, to a certain extent, been overlooked. We seem to need a work on the philosophy of medicine to guide us. Surely some great mind will give us this ere long, and teach us not only how to observe, but how to read the meanings of our facts and generalise them, so as to pave the way for larger inductions and the discovery of great laws to which the confused mass of facts in pathology and therapeutics would cohere. My work is only an illustration of the kind of work that is needed; it is merely intended to show what might be much better done and on a larger scale. In the first paper I have endeavoured to lay down the general principles of the inductive method. In the second paper I have endeavoured to show how the various actions of an important medicine (calomel) are in accord with the laws of osmosis; and in a third paper I show how one of our ordinary ailments (dyspepsia) may be largely due to interference with that same physical pro-

cess. My object is to show the importance of referring the action of a medicine on the one hand and a disease on the other to conditions which increase or diminish the activity of one of the great natural forces known to prevail largely in carrying on the functions of the body."

As a counterbalance to the purely speculative papers, several more practical in nature have been added. In one—"On the removal of renal calculi by toxic doses of belladonna," Dr. Murray recommends us to begin with a dose of forty drops of the tincture and to repeat it every two hours, increasing or diminishing the dose according to its effect on the patient. Other essays are entitled—"On the combined use of Pepsin, Pancreatine, and Ox-gall in Marasmus and Anæmia;" "On Emphysematous Dyspepsia;" "On the Dangers of Regular Habits," &c. In an appendix the author's method of treatment of abdominal aneurism by means of rapid pressure is described, and a full account is given of the first successful case, with the *post-mortem* examination performed six years afterwards.

The Pathology, Diagnosis, and Treatment of Intra-cranial Growths.

By PHILIP COOMBS KNAPP, A.M., M.D. (Harvard); Clinical Instructor in Diseases of the Nervous System, Harvard Medical School, &c., &c. Boston: Press of Rockwell and Churchill. 1891. 8vo. Pp. 165.

THIS monograph is a revision of the essay sent in by the author for the Fiske Prize, which it gained. It is based on the record of 40 cases in which autopsies were performed. The subject is treated under the heads of *Ætiology*, *Pathological Anatomy*, *General and Special Symptomatology*, *Diagnosis*, *Prognosis*, and *Treatment*, the last, of course, dealing mainly with the question of surgical procedure. Besides the recorded cases, some of them of great interest, one of the most valuable features of the work is the exhaustive tables, especially those at the end. The first of these gives a detailed analysis of 46 cases in which a growth was removed from the brain, and the second of 26 cases in which removal of the tumour was found to be impossible. These tables will prove of immense value to all future investigators. As regards the technique of the operation nothing has been added to the admirable rules laid down and applied with so much success by Mr. Victor Horsley. Dr. Knapp's essay supplies a present want in the litera-

ture of brain surgery, and we cordially welcome it. The type, paper, and general get up of the book are such as, apart from the interest of the subject, to make reading it a pleasure.

On Stertor, Apoplexy, and the Management of the Apoplectic State.

By ROBERT L. BOWLES, M.D., F.R.C.P., London; Consulting Physician to the Victoria Hospital, and Physician to the St. Andrew's Convalescent Hospital, Folkestone; &c., &c. London: Baillière, Tindall & Cox. 1891. Pp. 125.

THIS is a very interesting and well-written essay upon a subject the practical importance of which has been too much overlooked.

Stertor is the term applied to sounds in the mouth, throat, or any part of the air passages, produced by the movements of air during respiration, and occurring in the apoplectic and like conditions. Of it there are several varieties. 1. *Nasal*, due to approximation of the alæ nasi towards the septum in inspiration. 2. *Buccal*, due to vibrations of the lips, and puffings and flappings of the cheeks during inspiration and expiration. 3. *Palatine* from vibrations of the soft palate in nose and mouth breathing. 4. *Pharyngeal*, caused by the lolling back of the base of the tongue into near contact with the posterior wall of the pharynx. 5. *Laryngeal*, referable to vibrations of the vocal cords. 6. *Mucous*, produced by the bubbling of air through fluids in the trachea or larger air-tubes. Of these six varieties the palatine, the pharyngeal, and the mucous are the most important; they indicate a mechanical interference with breathing; they are a danger-signal.

All sounds of an abnormal character having their origin in the larynx, trachea, or bronchi, at once give rise in every practitioner's mind to a sense of impending danger; when, however, these sounds proceed from the nasal, oral, or pharyngeal cavities, their importance is frequently overlooked; they are regarded as of trivial importance; no attempt is made to relieve the conditions which produce them; and the ill effects on the patient produced by these conditions are overlooked. It is to demonstrate the importance of Stertor, and to show the means of relieving it, that Dr. Bowles has written the work before us.

Many of the features of the apoplectic state he believes to be due, not to the cerebral lesion, but to obstructed respiration. The first effect, he says, of a cerebral hæmorrhage is *shock*; the face is pale, the heart beating quietly, the blood-pressure low. If now

the patient, in his deeply-unconscious state, be allowed to lie on his back, stertor comes on—*i.e.*, the respiration becomes obstructed. Then the phenomena of partial suffocation manifest themselves; the heart labours to overcome an obstruction; the face becomes flushed and turgid; the pulse is strong and bounding; and the blood-pressure is high—a condition which obviously is very bad for the patient, as tending to increase the hæmorrhage into the brain, and so to do him further damage. If now the stertor be relieved, all the signs of impending suffocation will pass away; the congestion of the brain will be lessened; and nature will meet with no impediment in her attempt to right the disturbance brought about by the hæmorrhage.

Stertor, then, is always due to a local mechanical condition, and every effort should be made to relieve it. The supine position (lying on the back) is the worst possible; the tongue falls backwards, and the obstruction is most complete when the mouth is widely open, as by the falling of the lower jaw the space between the attachments of the tongue and the posterior wall of the pharynx is lessened. In that position, too, fluids accumulate in the throat and air-passages, and cannot be got rid of. If in these cases the patient is turned on to his side, so as to allow the tongue to fall forwards, breathing becomes free, fluids drain away from the mouth, and the general condition is greatly improved. In other cases pulling the tongue forwards is all that is necessary; but it is not enough to seize the tip of the tongue with a forceps and pull it; this proceeding has but little effect on the position of the base of the tongue; the fingers or some suitable instrument should be introduced into the mouth, and the base of the organ hooked forward. In other cases it is useful to put the fingers behind the ramus of the jaw and forcibly to pull it forwards and upwards, so as fully to extend the head upon the neck. But these manœuvres are only of temporary use, and suited for sudden emergencies. The main treatment of the stertor of apoplexy and similar conditions is postural—*i.e.*, by making the patient lie well over on his side.

There is a chapter on “Respiratory Difficulties” arising during the administration of anæsthetics. The author believes that many of the cases of death during chloroform administration are not cases of syncope, but are really due to sudden suffocation from the tongue falling backwards, or some similar cause. There are also useful remarks on the treatment of persons rescued from drowning,

on stertorous breathing in bronchitis and similar conditions. In these cases, and in cases of paralysis of the respiratory muscles, the patient, says Dr. Bowles, should be kept on one side, and that side should not be changed. Mucus and other fluids gravitate into and fill up the lower lung; and therefore, if the sides be reversed, the mucus will find its way into the opposite lung. The fluid crossing from the large bronchi of one lung to those of the opposite becomes churned into foam, and causes dangerous obstruction to the respiration. The lower lung, by remaining inactive and filled with mucus for a long period, is not thereby injured.

The last chapters consist of a paper on "Stertor in Animals," read at the British Medical Association meeting in Glasgow in 1888, and of a paper read before the Anatomical Society on "The Mammalian Pharynx," with especial reference to the epiglottis.

We have given this account of the scope and objects of Dr. Bowles's work largely in the author's own words, because the importance of the subject-matter, compared with the attention with which it is often treated, seemed to require such notice at our hands. But our extracts can give no idea of the interesting nature of the book, enriched as it is with a very large number of illustrative cases, related at more or less length; it is also provided with several instructive diagrams and woodcuts. We warmly recommend it.

The Practice of Medicine. By M. CHARTERIS, M.D., Professor of Therapeutics and Materia Medica, Glasgow University; formerly Physician and Lecturer in Clinical Medicine, Glasgow Royal Infirmary. Sixth Edition. London: J. & A. Churchill. 1891. Pp. 680.

A NUMBER of changes and improvements will be found in the sixth edition of this well-known handbook of medicine. A good many sections of the work have been re-written; and the increasing importance of bacteriology has induced the author to devote more space to this part of his subject. More prominence has been given to the mode of writing prescriptions.

The work has many excellencies. The style is clear and readable, and the author has fairly well avoided that fault which is so common in books which attempt to condense large subjects into a small space—namely, obscurity from over-condensation. The paragraphs on treatment are divided into—(1) Treatment by Drugs,

and (2) Dietetic and Climatic Treatment—a very good plan as tending to impress on the student's mind that the whole management of a case does not consist in writing a prescription for the disease. Students are far too prone to think that the sole requisite for any case is a suitable drug or combination of drugs. The arrangement in this book brings the other means of managing a case prominently before their notice. There are good appendices on prescriptions (of which a large number are given in full), tables, baths, &c.

About the weakest point in the book is the way in which it is illustrated. There are seven plates and upwards of twenty woodcuts in the text; some of these are fairly good and instructive, but many are so bad as to be simply ridiculous. There is a plate with two figures of intestinal ulcers, which give to our mind absolutely no idea of the subject they are intended to represent; and there is a figure which is supposed to represent transverse sections of the spinal cord, which is about as misleading as it is possible for a figure to be. We hope that in the next edition the author will see his way to revise or else withdraw some of his illustrations.

For our own part, we are not sure that works on medicine, small in size and necessarily incomplete, are ever really useful to students. We believe it would be better for them if they would read a complete account of one disease rather than a maimed account of several. But there certainly is a demand for such works as that before us, and we believe it to be one of the best of its class.

Spasmodic Wry-neck and other Spasmodic Movements of the Head, Face, and Neck. By NOBLE SMITH, F.R.C.S. Ed.; Surgeon to All Saints' Children's Hospital. London: Smith, Elder & Co. 1891. 8vo. Pp. 55.

THIS is a careful *résumé* of the literature of the subject and of the various medical and surgical procedures adopted from time to time for the relief of spasmodic wry-neck. The monograph is based upon two cases of the author's, in one of which section of the posterior divisions of some of the cervical nerves on the opposite side was necessary to complete the cure; and in the other there were facial spasms as well, which were relieved by the excision of a portion of the spinal accessory nerve. Mr. Smith does not follow the operation first performed by Campbell de Morgan, thirty

years ago, in which the nerve is exposed at its point of exit from the sterno-mastoid, and then dissected out of the fibres of the muscle up to the anterior edge and there excised, but seeks the nerve along the anterior border, severing any fibres entering the muscle that may be met with. The results certainly seem to justify the operation in extreme cases, or where preliminary stretching has failed, as no evil results appear to follow the paralysis of the sterno-mastoid and trapezius thus induced. The work bears some traces of haste or careless revising. Among the misprints occur "Trousseau," "capilis," "capitus," and "nervous," and many others which we might notice, but which the reader will have no difficulty in correcting.

Surgery. By C. W. MANSELL MOULLIN, M.A., M.D. Oxon: F.R.C.S.; Surgeon and Lecturer on Physiology to the London Hospital; formerly Radcliffe Travelling Fellow, and Fellow of Pembroke College, Oxford. London: J. & A. Churchill. 1891. 8vo. Pp. 1413.

WE confess to being disappointed with this work. It is true it is well arranged and well written up to date; but it lacks the stamp of surgical individuality, and it does not compare in style and clearness of diction with some of our classical text-books. For the student it is too vague and general in its statements to become a favourite, and for the practitioner its dogmatism is too invertebrate to make it a reliable guide. It is unfortunate that so many of the illustrations are copied from well-known manuals (a subject which has led to a non-edifying correspondence)—the more so as many of the original illustrations are of a high order of merit. The chapter on "Tumours" is written by Mr. Eve, and is, so far as it goes, good—but it goes a very little way. Until an English pathologist arises, we wish Birch-Hirschfeld's section on this subject was translated in full into every one of our text-books. Mr. Jonathan Hutchinson, jun., writes the chapters on "Diseases and Injuries of the Eye" and on "Diseases of the Skin." It is sufficient to say that the former occupies 30 pages and the latter 23 to give an estimate of their value. It is as absurd as it is unnecessary to endeavour to treat of so specialised a subject as the eye in a manual of general surgery—a remark which applies with equal force to the "Diseases of the Female Generative Organs," of which Dr. J. Mansell Moullin disposes in 29 pages. Twenty-two

pages are filled with an account of "Diseases of the Ear and Larynx," by Mr. Mark Hovell—sketchy in the extreme. For the rest of the work Mr. Moullin is, we presume, alone responsible, and it is of very unequal value, some of the sections being particularly good, while others are quite inadequate. The sections on Diseases of Joints and on Intestinal Obstruction are exceedingly well done, thoroughly up to date in their pathology and treatment, though in the description of the operations more detail might well be given. The account of Mikulicz's osteoplastic resection of the foot—an operation now largely practised—occupies just four lines. The operative treatment of intracranial suppuration is very meagrely treated, and no credit is given to Mr. Horsley for his sound suggestion, now so many times acted upon with brilliant results, of ligaturing the jugular vein in cases of septic thrombosis of the lateral sinus. Indeed, Mr. Moullin acknowledges in a very slight degree the work of any other labourers in the field of present-day surgery. The chapter on Amputations (12 pages) is quite useless for a student of operative surgery, and might as well be omitted from future editions unless much augmented. If the chapters on special subjects were to be omitted in the next edition, and the remainder of the book much amplified in the space so gained, we might have a well and clearly-written text-book of surgery that would be a fair reflex of the best that is known and thought in the surgical world of to-day.

Medical Publications, Harvard Medical School. 1890.

THIS annual periodical is unique in character and composition. It consists chiefly of reprints of articles contributed during the year to various periodicals, and of papers read before various societies by teachers in the Harvard Medical School, and of reports of original work done by them or under their personal supervision. These reprints, varying in size of page, in type, and in paper, are simply bound together, each separately paged. Of the eighteen included in the present volume, one is in French, contributed by Dr. Franklin H. Hooper, of Boston, to the Paris *Annales des Maladies de l'Oreille et du Larynx*; and one is in German, read by Professor Bowditch before the Physiological Institute of Leipzig. We have had occasion to notice previous volumes of this series, and this one maintains the high character of its predecessors. We shall notice briefly a few of these valuable papers.

Dr. Robert W. Lovett reprints from the *Journal of Physiology* the results of "An Experimental Investigation of Strychnine Poisoning." He starts from the admitted principle that, in the higher organisms, certain drugs have an affinity for certain organs; or, as he prefers to express the fact, there exists "a power in certain organs to select some substance from the circulation, and by destroying or excreting it, or by storing it up, to remove it from the blood." Thus, urea is removed by the kidney; peptones, poisonous in the general circulation, are broken up into glycogen and sugar in the liver; nicotin, conin, and some other alkaloidal poisons are less injurious after passing through the same organ; curara affects the motor nerves, veratrin and physostigmin the muscles, lead the nervous system, and so on. There remain, however, certain cases in which it cannot at present be decided whether organs attract specially the drugs which specially affect them, and selecting them from the circulation store them up in their own structure, or whether they are only specially susceptible of the action of the poison. Dr. Lovett set himself to determine the question experimentally for strychnin and the spinal cord. Does the cord attract and store up more strychnin than other organs, or is it more susceptible than they to the action of the poison? His method was—to inject known amounts of strychnin into frogs of known weight, noting the times necessary for the production of convulsions after various doses of the poison; to determine "if any difference exists in the relative amounts of the poison contained in the tissue of the various organs at a definite time after either the introduction of the drug into the system or the occurrence of convulsions;" and to ascertain the quantities of strychnin present in equal weights of spinal cord, muscle, liver, blood, &c. It was found that the cord does select strychnin and store it up, and that the quantity which must be present in the cord to produce convulsions is nearly constant, whatever may have been the dose. It was ascertained that in cases of strychnin poisoning the spinal cord contains more of the drug, weight for weight, than other organs; but whether it has special susceptibility for the poison was not determined. In practice the investigation teaches that the spinal cord is the best place to seek for strychnin in cases where the contents of the stomach are not forthcoming.

Prof. Bowditch has been inquiring into "the Physique of Women in Massachusetts," an anthropological subject of considerable importance. He has made accurate observations of height,

weight, sitting height, and stretch of arms, of over 1,100 women. He found the average height of 1,107 women (without shoes), aged 17 years and upwards, to be 158·76 centimetres. Dr. Sargent's average of 1,835 observations, the ages ranging from 16 to 26 years, is slightly higher; and Mr. Gatton's 770 measurements of English women, from 23 to 51 years of age, give also a higher average. In the latter case the difference may be partly racial, but most of it must be due to the lower ages of some of the American subjects. The average weight of Dr. Bowditch's 1,105 cases, in ordinary in-door clothing, was 56·51 kilogrammes. A comparison with Gatton's 276 observations (age, 23–26 years) shows that the range of weights is greater in the Americans, and also "seems to show that there is little difference between the shortest as well as between the lightest women of the two nationalities, but that the tallest English women surpass the tallest American women in height, while the heaviest American women exceed in weight the heaviest English women." As to sitting height, we need only record that "women appear relatively longer in the body and shorter in the legs than men." Finally, it appears that the popular notion that the arm-stretch is equal to the height is much more nearly true for women than for men, Dr. Sargent's measurements giving 100·8 : 100 for the former and 102·8 : 100 for the latter.

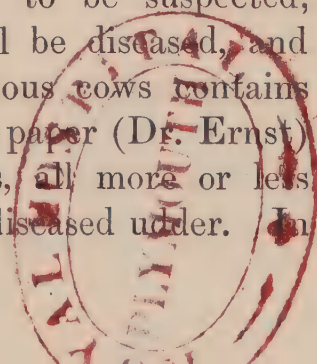
A paper of Dr. J. Amory Jeffries, of Boston, on "The Antibacterial Action of Iodoform," is reprinted from the *American Journal of the Medical Sciences* for January, 1888. He set himself to determine by experiment whether the belief in the bactericidal power of the drug is tenable, in the face of the fact that recent authorities have failed to observe any action upon pus-producing bacteria. Dr. Jeffries concludes:—

"Looked at from the clinical side, the ultimate object of all medical research, the following rules may be accepted: 1. Iodoform, not being a germicide, is not a fit substance to use to procure asepsis of instruments, materials, or wounds. 2. Iodoform is allowable, with the present state of our pharmacopœia, in infected wounds where the true germicides are contraindicated, as by danger of poisoning or impracticability. 3. As has long been known, iodoform has a decided tendency to stop serous oozing and, therefore, may be indicated in wounds where the moisture threatens the integrity of the aseptic or antiseptic dressing."

From the same journal a paper by the same author, "On the Sterilisation of Milk and Foods for Children," is extracted. During the summer of 1887 infantile diarrhœa was very prevalent in

Boston, and severe. Germicidal treatment was applied, consistently with the belief that bacteria are the cause of the complaint, but before these pernicious organisms came into prominence at all, the routine treatment of infantile diarrhoea was essentially bactericidal in its effects. That changes in the food, within or without the body, with or without the intervention of other organisms, are the exciting cause of the disease is generally admitted, and investigation of the milk-supply showed abundant room for improvement. As soon as Dr. Jeffries insisted that all milk intended for infants' food should be steamed in a vessel set on the top of the tea-kettle, and kept covered afterwards, convalescence set in. Boiling alters the milk to an undesirable degree; steaming is equally efficient as a bactericide and changes the milk but slightly. An elaborate series of experiments, which are given in detail, demonstrated the efficiency of the method. A simple apparatus, within the reach of all, for steaming milk or other food is fully described.

The connection between human tuberculosis and the milk of tuberculous cows is of such immense importance that we must notice Dr. Ernst's papers on the subject, read before the Association of American Physicians in September, 1889. On one side we have a very positive statement of Koch's:—"If infection is to take place, it is necessary that the milk contain tubercle-bacilli; but this appears to be the case only when the milk-glands themselves are affected with the disease." In the present state of our knowledge it is impossible to accept this dictum. Bollinger, Bang and Tschokke produced tuberculosis by inoculation of milk from tuberculous cows whose udders were *not* diseased; "but the experiments were so few in number that they cannot be accepted as furnishing more than a probability, and extremely critical persons might be justified in ascribing the results to contamination." In a subsequent series of experiments, Bang inoculated in rabbits milk from 21 cows affected with general tuberculosis but showing no sign of diseased udders, with only two cases of communication; and of eight inoculations of milk from tuberculous women none proved virulent. He concludes that milk from tuberculous cows is not necessarily dangerous, but is always to be suspected, "because no one can say when the udder will be diseased, and because, without this, the milk from tuberculous cows contains the virus in rare cases." The author of this paper (Dr. Ernst) examined 114 samples of milk, from 36 cows, all more or less tuberculous, but none having definite signs of diseased udder. In



17 samples, from 10 cows, specific bacilli were found. This is a percentage of 27·7. It follows that milk from tuberculous cows which exhibit no detectible udder-lesion not only possibly, but probably, contains the infective matter of tuberculosis. It was found, moreover, that the cream was as likely to be infectious as the milk, bacilli being found in the milk nine times after the cream had risen, and eight times in the cream. Dr. Ernst's investigations, carried on under the auspices of the Massachusetts Society for the Promotion of Agriculture, are not yet complete. So far as they have gone they seem to demonstrate that milk from cows anywhere tuberculous may contain the specific bacilli, whether the udder is diseased or not, the bacilli having been found present and active in milk in a large proportion of cases in which no lesion of the udder could be detected.

The Monist. A Quarterly Magazine. Chicago: The Open Court Publishing Co. 8vo. Pp. 160.

IT must be confessed that it is not without some violence that this periodical is brought before our tribunal, its connection with medical science being scarcely perceptible. Monists hold that in the universe there is only one form of substance and of activity, only a single element or principle from which everything is developed. If the boundary between psychology and physiology is evanescent we are, perhaps, justified in briefly noticing a journal conducted with great ability by Dr. Paul Carus, and, like so many of our American contemporaries, so admirably printed on such excellent paper as to make the reading of stiff ethical and metaphysical papers (almost) a pleasure. It must be admitted that the contents of the number before us (Vol. IV., July, 1891) are '*caviare* to the general'—certainly not such as a busy practitioner will choose to unbend over at his evening fireside. The first article on the "Psychology of Conception"—psychological, not physiological—by Mr. James Scully, is not inviting, but one of the questions discussed—*Is generalisation possible without language?*—is exciting a good deal of controversy at the present day. Can we generalise without names or other signs? The author's answer is, that "apart from verbal or other general signs, the full consciousness of generality does not exist." The space which this question occupies in modern psychology and anthropology is indicated by the reproduction in this number of the leading

Nominalist's (Prof. Max Müller's) lecture on "Thought and Language,"^a which the most determined Realist will read with pleasure. A "Convicted Anarchist," Mr. M. Schwab, writing from Joliet Penitentiary, replies briefly to Prof. Lombroso, who had laboriously deciphered "anarchy" and other wickednesses in the faces of the condemned Chicago anarchists. Of his method the writer asserts an amusing instance. Dr. Carus had supplied the professor with photographs of the prisoners taken in the county jail. The professor takes little notice of them, remarking, "perhaps these photographs were taken some years before the crime, when they were very young."

International Clinics. A Quarterly of Clinical Lectures. By Professors and Lecturers in the leading Medical Colleges of the United States, Great Britain, and Canada. Edited by JOHN M. KEATING, M.D., Philadelphia, &c.; J. P. CROZER GRIFFITH, M.D., Philadelphia, &c.; J. MITCHELL BRUCE, M.D., F.R.C.P., London, &c.; DAVID W. FINLAY, M.D., F.R.C.P., London, &c. Volume First. Edinburgh and London: Young J. Pentland. 1891. 8vo. Pp. 357.

THE title of this volume, which we have transcribed in full, gives a very complete idea of its character and scope, and, gathering together as it does the best teaching of the English-speaking race on both sides of the Atlantic, it merits a hearty welcome. This the contents fully justify, and it is only necessary to mention some of the principal contributions to show that we have here a group of clinical lectures on the most varied subjects, and in every branch of medical science, which will appeal to readers of the widest and most divergent tastes. It will be found to fulfil the purpose formulated in the preface—"to make this periodical a complete post-graduate course of medical instruction." Dr. James Ross contributes a full account of "Acromegaly;" Dr. Mitchell Bruce writes on "The Treatment of Cough in Phthisis;" Dr. Gairdner on "Hydrothorax (Pyothorax?) with Dexiocardia." Among the American contributors to medicine are the late Dr. R. Lea MacDonnell, who describes "A Case of Enlarged Liver with Jaundice;" Dr. Porter, who discusses "Polyæmia or Plethora in its relation to Inflammation and the Treatment of Pathological Processes in General;" and Dr. Shattuck, who treats of cases of

^a Delivered before the Philosophical Society of Glasgow, Jan. 21, 1891.

“Uræmic Convulsions, Epilepsy, Dysphagia.” On the surgical side we find Mr. Christopher Heath in one of his practical lectures on “Sore Throat;” Dr. Keen on “Modern Methods in Surgical Operations;” Mr. Hulke “On a case of Injury to the Head;” and Mr. Mayo Robson on “Cholelithiasis, with special reference to its Surgical Treatment.” Dr. Mann writes on “The Early Diagnosis of Pregnancy;” and Dr. Parvin on “Syphilitic Ulcer of the Vulva; Ovaralgia, Spinal Irritation, and Anæmia.” An excellent lecture by Sir Dyce Duckworth on “Chorea” occurs in the section of Pædiatrics (as, *pace* our American cousins, we prefer to write it); also one by Dr. Gray on the “Different Types of Paralysis in Young Children.” Under Neurology we find Dr. Mills writing on “Myotonia and Athetoid Spasm;” and Dr. Ferrier on “Alcoholic Paralysis.” Dr. Fox lectures on “Psoriasis,” and Dr. Hyde on “Xanthoma; Lichen Planus; Congenital Alopecia; Syphilitic Tubercle.” “Astigmatism: a very common and often unrecognised Cause of Headache,” by Dr. Julian Chisholm; and “Stubborn inflammations of the External Auditory Canal,” by Dr. Albert Buck, bring the first part to a conclusion.

We have displayed thus fully the excellent *ménù* provided—there are thirty-six courses in all—in the confident knowledge that any of our readers who may turn to it on our recommendation, be he general practitioner or specialist, will find there something to satisfy his hunger and something to whet his appetite. The work is a model of type, paper, and binding, and the illustrations introduced are, for the most part, excellent. We look forward with interest to the continuation of the work.

ENEMATA.

DR. CHARLES P. NOBLE recommends (*Medical News*, Philadelphia, April 25th, 1891)—℞. Sulphate of magnesia, 2 ounces; glycerin, 2 ounces; oil of turpentine, $\frac{1}{2}$ ounce; water, 2 ounces.—M. Dr. Noble uses it after abdominal sections and in threatened obstruction of the bowels; he finds it useful not only in evacuating the rectum but in getting rid of flatus, which is often a cause of pain in such cases.—DR. W. H. PORTER recommends (*Medical News*, Philadelphia, May 2nd, 1891)—℞. Inspissated ox-bile, 1 ounce; glycerin, 4 ounces; castor-oil, 2 ounces; water, 8 ounces; to be added to a quart of soap suds. Dr. Porter says the above will invariably soften and remove fæcal matter from the colon.

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.^a

By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

I. INSANITY IN GENERAL.

Verrücktheit.—The following extract of a paper by Dr. Werner (*Arch. de Neurologie*, 1890) is taken from the *Bulletin de la Soc. de Méd. Mentale*, No. 57:—The expression *Verrücktheit*, which signifies in the ordinary German speech simply insanity, was employed by Griesinger in 1845 as the designation of a chronic secondary mental disorder, characterised specially by ideas of persecutions and delusions of grandeur. He called this a partial *Verrücktheit* (*déli-re partiel* of French writers). Griesinger also admitted a generalised *Verrücktheit*, characterised by extreme disorder of ideation, accompanied by excitement, underlaid by a general weakening of the intellectual faculties (*folie aiguë* of Parchappe). In these two species he considered only incurable secondary mental disorders. In 1865 Snell described under the name of primitive monomania a similar entity which two years later he designated primary systematised insanity (*primäre Verrücktheit*). One year after this Sander separated from this form another original one (*originäre Verrücktheit*). He insisted on the necessity of retaining the name *Verrücktheit*, as the subjects are truly delusionally insane, their discernment has been overturned (*gerückt*), their personality, so to speak, displaced (*verrückt*) in such a way that they see the external world and their surroundings in an entirely different manner from what they would in their normal condition. The followers of Griesinger held to his original species of primary *Verrücktheit*. At the Congress at Hamburg in 1876 Westphal proposed a classification and ætiology

^a The author of this Report, desirous that no contributions to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal they will be forwarded.

of these primary systematised forms of insanity; but a few months later Hertz rejected the term *Verrücktheit* to adopt that of *Wahnsinn*. He claimed that it was not necessary to overload the terminology; moreover, *Verrücktheit* did not suit the primary curable types, and it was not separable essentially from that form which begins and ends with hallucinations. *Wahnsinn* is also an old term. The Prussian Civil Code denominates as *wahnsinnig*—that is, affected with *Wahnsinn*—the individual entirely deprived of reason. Griesinger also describes under this name a form of insanity beginning with the melancholic stage, and later developing fixed delusions which, nevertheless, do not render it incurable. In reality the cases of Griesinger resemble especially *Mania gravis*, and one of them is evidently of the type of paretic dementia. Snell with his monomania or systematised insanity struck a mortal blow at the theory of Griesinger, since he includes under this name a primary insanity; the monomania of Snell resembles that of Esquirol, since in it the faculties as a whole are less involved than in other forms of insanity. Griesinger also adopts their view; and Snell, when in 1873 he divided the systematised insanity or *Wahnsinn* (having repudiated the term monomania) into primary or true systematised insanity, and secondary or imperfectly systematised insanity, following mania, melancholia, epilepsy, &c., received general support. The school of Snell, reinforced by Nasse, Hertz, and Schäffer, preserve this nomenclature. It will be readily understood, since *Wahnsinn* (Snell) and *Verrücktheit* (Griesinger) are nearly synonymous. What signification do we attribute to these terms to-day? Krafft-Ebing inclines to adopt Griesinger's idea, and uses the term *Verrücktheit* in the same signification with one exception. Primary systematised insanity (*primäre Verrücktheit*) includes the mental degenerations. It is allied to reasoning mania, and represents a psychopathy that is usually incurable. There is also a secondary systematised insanity (*secondäre Verrücktheit*) following melancholia, and more rarely mania. The delusions, which have been subject to some fluctuations, become as it were crystallised in the mind of the patient in such a way that the whole of the external world is different to him from what it is to normal individuals. The *Wahnsinn* of Krafft-Ebing is a true psychosis from inanition, and it includes a large number of cases of puerperal and alcoholic insanities. Its prognosis, according to him, is favourable, and thus he unites this systematised hallucinatory disorder to mania and melancholia. "I

have never seen it," he says, "terminating in the crystallised systematised" insanity (*Verrücktheit*)—these are his own words. In other words he rejects the term *Verrücktheit* for the cases of more or less systematised delirium, and makes a complete distinction between *Wahnsinn* and *Verrücktheit*. He admits, nevertheless, that his systematised hallucinatory is the same as the acute primary systematised insanity (*primäre Verrücktheit*) of Westphal. It is identical also with the hallucinatory mania of Mendel, and the hallucinatory *Verrücktheit* of Foutsch and Meynert.

Kraepelin speaks of only one systematised insanity—it is either primary, congenital or acquired, or secondary and the terminal stage of other psychic disorder.

Schuele describes systematised insanity, *Wahnsinn*, either as acute or chronic. The forms he recognises, and which in his opinion are curable, are as follows:—

1. Depressive systematised chronic insanity, including the persecutory delusions properly so called, systematised hypochondria, and the more or less systematised insanity of masturbation.

2. Chronic expansive systematised insanity.

3. Acute primary systematised insanity, comprising the following:—(a.) The acute hallucinatory form; (b.) The melancholic form; (c.) The expansive maniacal type; (d.) The stuporous form; and (e.) The cataleptic (atonic) variety.

He retains the name *Verrücktheit* for the congenital systematised insanity of Sander, and holds that there is an abortive form of this that manifests itself in the shape of psychopathic accidents, which, after the duration of a few weeks or months, may finally terminate in recovery.

The author illustrates the confusion in the terminology by a suppositious case—a not unusual type of puerperal insanity—which would be diagnosticated by various authorities either as hallucinatory mania (Mendel), primary acute systematised insanity (Westphal), systematised hallucinatory insanity, *Wahnsinn* (Krafft-Ebing), confusional insanity, *Verwirrtheit* (Wille), and asthenic delirium (Mayer). He prefers to reject all these terms and to use only the general designation of Paranoia, which has the advantage of not being associated with any incorrect or partial popular conception of mental derangement in any modern language, and of being in accordance with the scientific usage of employing terms of Greek or Latin origin. Using this for the general designation he makes the following subdivisions:—(1.) Acute primary paranoia, hypo-

chondriacal or hystero-congenital. (2.) Chronic primary paranoia. (3.) Acute hallucinatory paranoia—for example, the psychosis from inanition, such as the hallucinatory *Wahnsinn* of Krafft-Ebing. (4.) Chronic hallucinatory paranoia. (5.) Secondary paranoia following other forms of mental disorder, or which forms a stage of transition.—(*Am. Journ. of Insanity.*)

Characteristics of Criminals.—Prof. Lombroso finds that in congenital criminals the sensibility to pain is much less than in other men, approaching that of savages, so that they will endure severe injuries or surgical operations with little or no appearance of suffering. To this lack of sensibility he attributes much of their cruelty. He quotes Ottolenghi, who found by examination of the urine of fifteen congenital criminals that the excretion of urea was below, and that of phosphates about the normal standard. The sense of smell is less acute in criminals than in normal men. Forty-four out of eighty criminals examined by Ottolenghi lacked it entirely. The sense of taste is also in many cases imperfect. Criminals, like savages, are much given to communicating by gestures, and the custom of tattooing the person is extremely common among them. A blending of religious and obscene or criminal pictures is frequently observed. This excessive fondness for tattooing the author considers an atavistic phenomenon.—(*Centralblatt f. Nervenheilk.*, 1890.)

Influence of Pyrexia on Insanity.—To the *Allgem. Zeitschr. f. Psych.* Dr. Willerding contributes a paper on the favourable influence of pyrexial disorders upon mental disease, and reports a case of acute mania in which recovery followed upon an attack of pleurisy. Amongst certain physicians, says the author, the appearance of an epidemic in the asylum is hailed with satisfaction (!) These advise that acute fever should be artificially produced in the insane, and some have not hesitated to inoculate matter capable of generating the required disturbance. It has been proposed (Koster) that asylums should be erected in places where ague is prevalent, since good results have followed the accidental exposure of the insane to malaria—amongst twenty-four attacked seven regained their sanity and seven others improved greatly. But even the paludal miasm is less potent for good than the “germ” of another disorder—viz., typhus, the course of which is sometimes attended with astonishing results. Variola, erysipelas, pneumonia, and diphtheria are other affections, closer acquaintance with which the lunatic might solicit with possible advantage. The author con-

cludes by narrating his case—one of acute mania following upon an attack of “typhus abdominalis.” The maniacal symptoms disappeared in the course of pleurisy attended by considerable fever. They did not reappear on the subsidence of the latter disorder. The patient was discharged cured. [Several cases similar to that just quoted have come under my own observation. I have seen an acutely maniacal patient emerge from an attack of typhoid convalescent from her mental derangement. I have noted two other cases of a similar kind where very great improvement followed outbursts of fever. Erysipelas of the head and disorders of the lungs I have also seen followed by remarkable subsidences of mental derangement.—*Rep.*]

II. ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

Brain-Weight, and the specific gravity of separate parts of the Brain.—Prof. H. Obersteiner, of Vienna, communicates to the *Centralblatt f. Nervenheilk. u. Psych.* Neue Folge, I. Band, a paper on this subject. He refers, in the first place, to the lowest brain-weight in persons mentally sound recorded by Bischoff. The brain was that of a woman, aged 53; it weighed 820 grammes. But in the author's laboratory in Vienna a brain was found to weigh (with the membranes) 788 grammes. The patient had been able to attend to the wants of daily life, and converse upon the most varied topics. The brain-substance was traversed by fissures of various sizes, the result of old encephalitis. Turning next to the highest recorded weights, the author dismisses as not only unreliable, but as quite false, the statements concerning the brains of Cromwell and Byron. Bischoff records weights of 1,925 grammes and 1,770 grammes. The brain of the celebrated Russian, Turgeneff, which was examined by eminent Parisian physicians, weighed 2,012 grammes (with or without membranes?). The author has himself met with an instance of extraordinary weight. The brain was that of an individual of medium height and average build, a Jew. His mental endowment had been good, but he had never engaged in a serious vocation, and had squandered a considerable fortune, finally dying, aged 58. His brain in the fresh state and stripped weighed 2,028 grammes. The convolutions were strikingly broad, but there was no diminution in their number. Microscopical examination of cortex revealed no peculiarities. This case can be added to the already considerable stock in which, with extraordinary amount of brain-substance, there is only the ordinary intellectual

capacity. Lastly, the author refers to the specific gravity of the human brain. More frequent and precise inquiry into this matter is desirable. In regard to methods, he considers that those by which the specific gravity of the entire organ is obtained are uncertain. He himself prefers Sankey's method. A table of figures is given in which the specific gravity of various parts of the cerebrum and cerebellum (cortex and medulla) in twelve cases appears. The frontal cortex is lightest, the occipital heaviest, the parietal and temporal occupying a mid position. The central medulla of the cerebrum, and that of the cerebellum are heavier than the cortex, and of equal specific gravity. Heaviest of all is the pons. The thalamus—owing to the greater amount of its white substance—has a higher specific gravity than the corpus striatum. One of the anterior frontal convolutions was taken out and its cortex divided into three equal parts, of which the specific gravity from without inwards=1,028, 1,034, and 1,036. The innermost portion, with its mass of radiating fibres, was the heaviest.—(*Am. Journ. of Insanity.*)

The Dura Mater.—M. Trolard (*Journ. de l'Anatomie*, No. 4, 1890) gives a study on certain peculiarities of the dura mater. The falx cerebri serves to keep tense the tentorium, and it also opposes the pressure which one cerebral hemisphere exerts on the other when the head is inclined to one side; but its most important function is that in a manner it holds the brain suspended, and prevents the lower portions from being compressed by the overlying parts. An analogous protection exists for the lower portions of the cerebellum. How does the falx thus support the hemispheres? By the intermediation of the pia mater, which, firmly fixed to the cerebral surface, and also dipping into its substance, has, on the other hand, notable adhesions to the dura. On the convexity of the brain the pia is intimately connected with the falx along the superior border of the hemisphere. The Pacchionian granulations assist in this adhesion; taking rise in the subarachnoid cellular tissue they attach themselves to the pia, and going towards the dura they penetrate it and, swelling, form a veritable riveting together of all the membranes. The more anterior portions of the meninges are connected with the cerebral veins and sinuses. The internal face of the hemispheres is suspended by its middle and lower portions. The middle portion is held up by granulations which pass through the openings of a network nearly always constant, existing in the falx at the union

of its anterior third with its posterior two-thirds. If the orifices of this network are very large there is union of the pia mater of the two hemispheres. At the lower portion fibrous filaments leave the free border of the falx and attach themselves to the pia, chiefly on the larger of the ventricles of the corpus callosum. The falx likewise supports the pia which comes from the ventricles and those portions which come from the grooves of the posterior portion of the hemispheres, notably the calcarine and internal perpendicular fissures. The support of the cerebellum is due to the fact that the inferior plane of the collection of fibres which is observed towards the posterior confluent adhere to the cerebellar pia at the horizon of the anterior extremity of the superior vermis. These two united membranes join the falx below and behind the ventricular veins. M. Trolard, having demonstrated the way in which the brain is suspended, seeks to prove that the pituitary body is a prolongation of the dura in the same way as is the fibrous envelope which lines the orbital cavity. From each side of the crista galli process on the horizontal plate of the ethmoid we find the ethmoidal opening which gives passage to only a very small nervous filament and some forty orifices, of which only about a dozen are occupied by the olfactory fibres; the other openings give passage to prolongations of the dura which unite below the cribriform plate and join the sheaths of the olfactory nerves, forming a thick membrane which is continuous with the pituitary body. M. Trolard gives an interesting anatomical detail here. He finds that the anterior portion of the olfactory lobe is lodged in a little cavity bounded as follows—within by the crista galli process; externally by the border of the frontal; below by the cribriform plate; above by the prolongation of the dura; starting from the crista galli, and attached to the margin of the frontal which limits externally the olfactory fossa. He has also observed a little falciform fold of the pia mater bounding the olfactory fossa posteriorly. He shows also how the falx cerebri is inserted into the foramen cæcum, and cites a case of duplicated dura mater.—(*Am. Journ. of Insanity*, Ap., 1891.)

The Neuroglia of the Nerve Centres in Man.—Carl Weigert (*Anat., Anz.*, 1890, No. 19, and *Neurol. Centralblatt*, No. 1, 1891) claims to have discovered a method by which a nerve-fibre can be surely distinguished from a fibre of the neuroglia even after the nerve-fibres have become disconnected with the nerve-cell. His process, the details of which he does not explain, consists in stain-

ing the neuroglia deep blue, the other anatomical elements being unaffected. Dr. Weigert states that his preparations confirm Ranvier's view, that the fibres only lie against the body of the cell, and the protoplasm of the cell appears under the microscope to be of different composition. The fibres are smooth, without varicosities. After death the tissue becomes altered, and granules and molecules appear. The composition of the neuroglia is different from the neurokeratin of the peripheral nerves. This is brought out by Weigert's new process of staining. It is only at the exit of the roots of the nerves that a tuft of fibres of the neuroglia goes a little way along the nerve-trunk. It is on the surfaces of the nervous centres that the network of the neuroglia is thickest. In the spinal cord all the single fibres of the white substance are separated from one another by strands of the neuroglia. In the zone of Lissauer the fibres of the neuroglia are abundant; they are even more so around the central canal. In the *substantia gelatinosa Rolandi* they are rare. The olivary bodies are rich in fibres of neuroglia. In the cerebellum there are many in the white substance. The cells of Purkinje are surrounded by a basket of very delicate fibres. In the white substance of the cerebrum there is a thick network of neuroglia; in the layers of the gray matter the neuroglia is rare. Weigert's preparations show bright interspaces between the fibres.—(*Journ. Ment. Sci.*, Oct., 1891.)

Ziehen's Method of Staining Brain Tissue.—Dr. T. H. Ziehen (*Neurol. Centralblatt*, No. 3, 1891) found that Golgi's method of colouring laboured under some disadvantages. The preparations of the nerve-tissues did not keep well, and the black colour given to the nerve-cells obscured all details of their inner structure, while the nerve-fibres remained generally uncoloured. Greppin tried to remedy the dark colouring by treating his preparations with hydrobromic acid. To obviate the last disadvantage, Golgi himself, Ramon, T. Cajal, and Kölliker preferred to study the nervous system in embryos and new-born animals, in which all or most of the nerve-fibres have no axis-cylinders. On the other hand, Flechsig thought to combine Weigert's method of dyeing with logwood with Golgi's method of dyeing with silver. Though Dr. Ziehen admits that these were improvements on the original plan, he thinks he has found out a better process, which he thus describes:—Small square pieces of cerebral tissue taken from an animal recently killed are put to harden in a fluid composed of a

one per cent. solution of chloride of gold and one per cent. solution of corrosive sublimate in equal parts. In this solution the preparation is kept three weeks, or, better still, several months, there being no necessity of changing the fluid often. The pieces assume a red-brown metallic look, and can be stuck on cork and cut in thin slices. The slices put in alcohol have a dark-blue colour by transmitted light and a metallic-brown colour by reflected light. For differentiation they are now put into a weak Lugol's solution, 1 to 4. Here they are allowed to lie a longer or shorter time, according to the thickness of the sections. Tincture of iodine diluted with alcohol can be substituted for Lugol's solution. Then the slices are washed in absolute alcohol and mounted in oil of cloves and Canada balsam, as usual. Metallic instruments should be avoided as much as possible, but contact with the micrometer knife does not seem to have bad effects. Dr. Ziehen finds, as a result of this process, that both the fibres with axis-cylinders and those without, as well as nerve and neuroglia cells with their processes, appeared to be coloured bluish green. A greater number of coloured nerve-cells now appear than through Golgi's method, and the branches of cell processes are more numerous. The ramifications of axis-cylinder processes are more easily seen, and the nuclei granules are more readily distinguished; the contour of the cells and nuclei is more visible, and though the interior is coloured dark blue it remains almost transparent; there are some minutiae in the colouring, and specially in the decolourising, of the sections which affect their appearance; some elements are better brought out by the longer or shorter time in which the iodine solution is allowed to act on them. Dr. Ziehen tried hardening his preparations with chromic acid, and putting them for several weeks in a solution of chloride of gold and corrosive sublimate, and then treating the sections with iodine. The result was that the body of the ganglion cells appeared almost transparent, but sharply defined, while the protoplasm processes presented a peculiar black colour. Their appearance may be made to vary through keeping them a longer or shorter time in the solution, so that the processes and axis-cylinders and different parts of the cells may be studied in separate relations.—(*Journ. Ment. Sci.*, Oct., 1891.)

The Freezing Method of the Examination of Brain Tissue.—The following is Dr. Bevan Lewis's method of cutting sections by the freezing method, and their subsequent treatment, as recently detailed by him (*Centralblatt für Nervenheilkunde*):—The freezing

is done by ether, and a good form of microtome is that described in *Brain*, Vol. I. (Stirling's instrument is very efficient also). Much importance is attached to the character and quality of the section knife. In that recommended by Dr. Lewis the blade measures 5 inches by $1\frac{1}{4}$ inch; both surfaces are concave, that uppermost in section cutting the most so, in order that a sufficient quantity of water may be retained on the blade. To prepare this upper surface for use ether, in sufficient amount to cover it, is employed; the blade is then immediately dipped into water. By repeating this procedure three or four times the uniform covering of the surface by a layer of water is insured. If there be too much water on the blade (or the under surface be wet) the fluid runs on to the section, where it sets into an icy mass, which injures the knife edge. If, on the other hand, the upper surface is insufficiently moistened the sections cling to the blade and are torn.

Having prepared the knife the cutting is commenced. The freezing chamber of the microtome is lowered until the cap is level with the under-surface of the section-plate, and a piece of brain substance somewhat thicker than the plate is laid upon the centre of the metal cap of the freezing chamber. A couple of drops of water placed at the edge of the tissue suffice, when frozen, to hold the latter firmly to its support. The ether spray is now caused to play upon the lower surface of the cap beneath the tissue, and freezing will be facilitated by a current of cold air. Freeze the substance to be cut up to the level of the section-plate, and then, with a sweep of the knife, remove the unfrozen tissue above. From the surface thus obtained sections are taken, the knife being dipped, prior to the cutting of each section, into a vessel of water, and its under-surface then dried by passing it rapidly across a towel placed over the knee. Float off the sections into another vessel. Each film thus cut is taken up on a slide and superfluous water allowed to drain off. The section is now floated up by a few drops of a solution of osmic acid (25 per cent.), a pipette being convenient for this purpose; the fluid is also carefully drawn over the surface by a penknife or brush. The osmic acid is permitted to act for a few seconds only; the tissue is then placed in pure water for five or ten minutes and gently washed. Staining may now be proceeded with—aniline blue-black is the agent employed, in the strength of 0.25 gramme (of the granular powder) to 100 c.c. of distilled water. Each film as it

lies on the slide is covered with the staining fluid, which is allowed to act for about one hour; the excess is then poured off, and the film plunged into water and gently washed. It is once more received upon a slide, the fluid drained off, and the slide placed under cover on a slanting shelf, where the film dries spontaneously; when absolutely dry it is mounted directly in benzole solution of balsam.

In conclusion, a few hints and remarks may not be amiss. In cutting the tissue, if the gray matter be placed nearest the operator and so cut first there is greater likelihood that a portion of pia mater will be obtained with the section, and this is, of course, desirable. Osmic acid is used in order to fix the myelin of the nerve-fibres, which exudes in contact with water; when the acid is employed the film does not deteriorate in water, and can be manipulated without danger. The best sections are obtained from the slowly-thawing tissue; hence it is unadvisable to freeze above the level of the section plate. The temperature of the room should be below 60° F. The fresh as compared with the chronic method has this great advantage, no shrinking of the brain substance is produced; hence, in sections prepared after the manner above described we find the nerve-cells more crowded with processes more numerous and distinct than in corresponding sections from hardened brain. In the former, also, the cells are not stunted, and are far less angular than in the latter.

Vassale's Modification of Weigert's Process of Staining the Nervous Tissues.—In the *Revista Sperimentale*, Dr. Vassale proposes the following modification of Weigert's well-known process:—The sections are first immersed for three to five minutes in a one per cent. solution of hæmatoxylin in distilled water, whence they are transferred for a like time to a saturated solution of neutral acetate of iron, in which they become very black. After washing they are plunged in a solution of two parts of borax and 2.5 of prussiate of potassium in 300 parts of water. The ganglionic cells, the neuroglia, and the degenerated portions lose their colour, the medullary fibres remaining a dark violet. After careful washing the colourless parts may be stained with picrocarmine, according to Pal's method.

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Pathological Anatomy of Insanity.—Luys (*Journ. de Med. de Paris*, March 1st) calls attention to an alteration that he has found in the brains of patients who had for many years been in an excited

condition—viz., the hypertrophy of certain special regions of the paracentral lobules. The paracentral lobule is, as is well known, the point of confluence of the psycho-motor convolutions of the cortex, and one of the special regions where the psycho-motor innervations are specially accumulated. This hypertrophy therefore indicates a focus of continued excitation, absorbing to itself the vitality of the other cerebral regions which are found more or less notably atrophied. In the extreme cases of excitement with dementia in which this condition was observed he claims the subjects are completely absorbed in the hallucination or delusion connected with this hypertrophied region of the brain. The hypertrophy is usually symmetrical in the two hemispheres, but he presented the brain of a patient in whom there was a visceral hallucination that she was inhabited by a tape-worm, which completely possessed her that it became almost her sole idea. She dwelt constantly on the coming and going of this parasite in her internal organs. Aside from this idea, when she could be induced to speak on other matters she was perfectly lucid in her mind. The brain of this patient exhibited very marked hypertrophy of the paracentral lobe in one hemisphere, that of the other remaining perfectly normal. M. Luys explains by this anatomical arrangement the patient's clearness of mind co-existing with the delusion; she was insane with one hemisphere of her brain, and rational with the other.

The Pathological Anatomy of Paralytic Dementia.—At the International Congress at Berlin Mendel read a paper on this subject, confining himself to the microscopical changes, which he found in the cases examined to be as follows:—

1. *Neuroglia.*—Two changes: increase of nuclei and increase and enlargement of spider-cells. The latter are only found in the normal brain in the superficial layer of the cortex. If the disease is of long duration sclerosis develops through fibrous degeneration of the cortex; in case the medullary substance is principally affected, it may be possible to wash the cortex away from it with a stream of water, especially when the body is not entirely fresh.

2. *Blood-vessels.*—Increase of nuclei in the walls of the vessels; thickening of their coats; hyaloid degeneration.

3. *Ganglion-cells.*—Alterations of the protoplasm, sclerosis, and atrophy are found in most cases. Gudden found them in all.

4. *Nerve-fibres.*—The disappearance of the nerve-fibres is not confined to the cortex, but is a general affection; it has been observed in the gray matter of the ventricles and in the cerebellum.

The degeneration of the nerve-fibres is not specific for general paralysis; it has been observed in alcoholic paralysis, senile dementia, epilepsy, and other psychoses. Focal lesions have long been observed in this disease. In the spinal cord the most various alterations may occur—all the different forms of systematised sclerosis, separately or in combination, and the various forms of myelitis.

Although there is no specific lesion of this disease, it is nevertheless a disease *sui generis*, which may be recognised anatomically, apart from the clinical history. The essential feature is the diffuse extension of the process over the brain.

In regard to the origin of the process, the author inclined to the view that it had its starting point in the vessels rather than in the nervous tissue, and that it is to be considered as a chronic inflammation of the neuroglia, terminating in atrophy. In the discussion which followed, Tezek, of Marburg, held that one of the most uniform peculiarities of paralytic dementia was the predominating affection of the frontal lobes, and that when the posterior parts of the brain were affected it was a secondary trouble. He had never failed to find degeneration of the nerve-fibres of the frontal lobes, but had always found it localised in the anterior part of the brain. Dagonet, of Paris, called attention to the hyaloid degeneration described by him, and especially to the peculiar corpuscles found in the lymph spaces.

Zacher, of Ahrweiler, had recently examined two cases of short duration. In the first, which proved fatal in less than four weeks, he found extensive destruction of the nerve-fibres, especially in the frontal region. In the second, which lasted two months, he found nothing abnormal. He believed that in a large proportion of cases the starting point of the disease was in the nervous system. In galloping paralysis the process was mainly confined to the nervous system; in chronic cases it was predominantly an inflammatory process in the vascular system.—(Abstracted in *Am. Journ. of Insanity*.)

The Condition of the Intercortical Fibres in Dementia.—MM. Keraval and Targoula report (*Le Progrès Médical*, 1890. 29) the result of microscopical examinations undertaken to ascertain the condition of the intercortical fibres in the later stages of general paralysis and in secondary dementia. They found that the medullated intercortical fibres disappeared to a large extent in the advanced stages of general paralysis, and the same was the case also

in secondary dementia, whatever might have been the form of the primary mental disorder. The frontal lobe is the region of the brain most involved, and in it the gyrus rectus is the portion that invariably suffers most. The paracentral lobule, on the other hand, is the region that most generally escapes, or is least involved. As regards the different layers of the cortical substance, the morbid process extends irregularly throughout them all, excepting that they observed that the latest remaining medullated nerve-fibres were nearest to the white substance. They also found that this process of atrophy of the fibres might extend without any necessary involvement of the meninges. Their examinations were made on twelve brains, and included not less than five hundred histological specimens.

Homonymous Hemianopsia; Recovery; Subsequent Death and Necropsy.—Anderson (*Ophth. Rev.*, Dec., 1889) reports the case of a man, aged forty-one, who complained of a failure of vision for six weeks, with severe frontal headache, much failure of memory, and mental depression. He could not see to the right side, and his speech had altered. No loss of gross motor power or of general or special sensation, except as regards vision, was observed. The gait and reflexes were normal. The ocular and pupillary movements were normal, and the media and fundus were healthy. Vision and accommodation were normal. The right halves of both visual fields were lost up to, but not including, the line through the fixation point. Anderson concluded that the patient had an intracranial growth situated in the medulla of the left occipital lobe, and that a hæmorrhage had taken place into the tumour recently. Within two weeks the headache and mental symptoms had much subsided, and there was only very slight contraction of the right halves of the visual fields. Two months subsequently he had a transient attack of left hemiplegia, which soon passed off. Three weeks after the occurrence of the hemiplegia the quadrants of the right halves of both visual fields were deficient nearly to the vertical line through the fixation point. Vision was still good, and the fundus was normal. Rapid mental deterioration ensued, and he died demented three months later. There was a recent blood clot in the posterior cornu of the left lateral ventricle, with hæmorrhage and softening of the tissue external to this, involving the whole of the angular gyrus up to its surface. The angular gyrus was replaced by gliomatous tissue.

Recovery from Hemianopsia with Subsequent Necropsy.—Doyne (*Ophth. Rev.*, Dec., 1889) reports a case of an old man who had a sudden attack of right homonymous hemianopsia. The fields of vision recovered in the course of two weeks, but subsequently a quadrant of the opposite side of each field was lost. Death occurred some weeks later from cerebral apoplexy. At the autopsy, in addition to the extensive extravasations which caused death, there was found asymmetrical softening on both sides of the brain in the cortex of the occipital lobe, one evidently more recent than the other.—(*Alienist and Neurologist.*)

The Ætiology of General Paresis.—The ætiology of general paralysis was the subject of several communications to the French National Congress of Alienists at Rouen. M. Dubuisson gave statistics embracing some 6,000 insane patients, including 1,600 subjects of paretic dementia. He found alcoholism predominated over all other causes of disorder, while, according to his figures, syphilis is given as a cause of only fifty cases, and an equal number was attributed to traumatism, which is not usually recognised as among the leading causes of the disease.

M. Régner read a paper on the special subject of the relation of cerebral syphilis to progressive paresis, in which he held that the infection of syphilis did not produce the symptoms or lesions of general paralysis. That there is no such thing as syphilitic paresis, but that cases so referred were either those of cerebral syphilis, wrongly diagnosticated as true paresis, in which the specific symptoms were merely incidental.

M. Régis followed with a communication in which the opposite views were held, giving an analysis of twenty-one cases in which the specific disorder certainly existed in eighteen. In one it was doubtful, and two were free from syphilis. He claimed that on the average eighty per cent. of paretics were syphilitics. The paralysis generally appeared from twelve to thirteen years after the infection, and, as a rule, it appeared more quickly when the primary disease had been too briefly or insufficiently treated. The syphilitic paretics usually presented none of the stigmata, and only occasionally were there traces of old or recent specific lesions. All the clinical varieties of general paretic dementia are met with among the syphilitic cases, and the remittent and circular forms appear to be especially frequent.

M. Cullère remarked that after a period of scepticism he had come to believe that the relations of syphilis to general paralysis

were very real. In the hospital under his observation he thought that the average was about thirty-seven per cent. syphilis in females, and for the two sexes together he would admit a hypothetical ratio of forty-two per cent. The syphilitic paretics are generally youthful, though they may be of advanced age. If a peasant had neither been a soldier nor sailor nor domestic, if he did not leave his native village, he would not become a parietic, because he would not be specifically infected. He did not believe that syphilis alone would produce general paralysis; other causes are also required, Hereditary predisposition was very frequently found, and among other causes are over-work, long residences in hot climates, &c. Specific paresis has no general characteristic symptoms.

M. Voisin was of the opinion that M. Régis had given too important a place to syphilis in the ætiology of paresis. One point in which his statistics failed was in the lack of autopsies. In his own experience he had 560 cases, only nine of which were syphilitic. He had, moreover, not limited himself to the testimonies of the patients on this point, but had searched for the signs which are almost always to be found in the tertiary stages, and which alone give rise to symptoms identical with those of general paralysis. In cerebral syphilis we have symptoms differing from those of paresis: persistent headache, partial paralysis, hemiplegias, ocular paralysis, and epileptiform attacks. The expansive delirium of paresis is also wanting. It is different also as regards the results of specific treatment.

M. Charpentier had been struck with the frequency of syphilis in general paretics. The syphilitic form did not differ materially in symptoms from the true, but he considered it rare. It was possible that there existed diffuse interstitial scleroses of syphilitic origin.

Several other physicians took part in the discussion, and the general opinion of the majority seemed to be that there is a striking coincidence of syphilis in general paresis, if not an ætiological relation between the two. It seems a little remarkable, however, that so high an authority as M. Voisin should be so positive that this relation does not exist, and it can be accounted for only, as suggested by those who took part in the discussion, by assuming that the rejection or admission of the influence of syphilis depends upon the prepossession of the individual.—(*Am. Journ. of Insanity.*)

The Nature and Frequency of Disease of the Spinal Cord in

General Paralysis.—Dr. Köberlin, of Erlangen, records the results of his examination of the spinal cords in twenty-three cases of general paralysis, pieces being taken from the cervical, dorsal, and lumbar regions in each case. For staining Weigert's hæmatoxylin was used, and occasionally carmine. Pal's modification of Weigert's method giving uncertain results was not employed. Numerous drawings are given, in some of which disease of the lateral pyramidal tracts and posterior columns is portrayed in a very early stage. In the regions last mentioned the morbid change is seen more particularly in certain parts, all or some of which are affected, according to the duration of the disease; sometimes Goll's columns alone are degenerated, or Burdach's columns participate, but to a less extent; sometimes these latter show the greater changes, and Westphal's and Lissauer's tracts bear the brunt of the disease. Certain drawings exhibit a mapping out of Goll's columns by streaks of degenerated tissue separating each column from the outlying area of Burdach—the two streaks being quite symmetrical. The morbid appearances comprise atrophy and degeneration of the medullated fibres, with excess of connective tissue, and also plentifully-distributed corpora amylacea. Both in tranverse and longitudinal sections the degeneration was found to be remarkably symmetrical. In one case syringomyelia was found, but this case the author considers atypical. The cases are, in conclusion, considered in three classes, according as there existed disease (1) of crossed pyramidal tract; (2) of posterior columns; (3) of both together. In one case of the first-mentioned class there was a difference in weight between the cerebral hemispheres, and as the more atrophied hemisphere was opposite to the diseased lateral tract the author is disposed to think that the pyramidal degeneration was secondary. Amongst the cases in the second class he gives reasons for considering the cord disease as primary in some; in others the brain disease was probably first to develop. In none of these twenty-three cases were the anterior columns or lateral cerebellar tracts diseased.—(*Allgem. Zeitschr f. Psych.*)

IV. NEURO-THERAPEUTICS.

The Treatment of Mental Diseases by Hypnotic Suggestion.—Dr. Giuseppe Seppilli has an interesting review of this subject in the Oct. (1890) number of the *American Journal of Insanity*. To Voisin is due the merit of having first called attention to the application of hypnotism to the treatment of mental disorders; he

has from time to time published records of cases showing surprising results. By means of suggestion made during hypnosis he witnessed the cessation of agitation, the disappearance of hallucination, of delirious ideas and suicidal tendencies. Thus, for example, a hysterical woman of twenty-four years, who for eighteen months before had been unable to work, was constantly complaining, and dominated by the dread of becoming insane, and of being a disgrace to her family, was cured of this morbid state in one month by means of hypnotic suggestion. In another woman of twenty-one years there disappeared an erotic delirium, that was associated with hallucinations of sight and hearing, which had lasted for some time. Several patients affected with amenorrhœa and mental disturbances were cured by the same means. But still more singular appear the effects obtained by Voisin in cases of dipsomania. A man, aged thirty-five years, for ten years the victim of dipsomania, the excesses being repeated twice each month, and lasting for ten days consecutively, was completely restored after two hypnotic sittings. A lady of forty-two years had for four or five years felt an excessive desire for drink at the menstrual periods, and at these times consumed five or six bottles of wine daily, and a quantity of brandy. She had become thin, pale, and irascible, and had agitated sleep. During hypnosis it was suggested to her that she would sleep tranquilly through the night, in the interval between meals would feel no desire for drink, and that at each meal only half a bottle of wine would be required. After a few sittings these suggestions had a salutary effect, and the lady left off her alcoholic habits. The same result was obtained in the case of a lady of thirty-one years, who for several years before had been assailed every eight or ten days with a mania for drink. Recently Forel, of Zurich, suggested to four individuals affected with alcoholism that they would completely change their mode of life and take part in a temperance society; and in fact they did so. But he does not tell us whether they have faithfully retained the suggestion received by them. Encouraged by the results of Voisin and Forel, Ladame, of Geneva, applied hypnotic suggestion in three cases of alcoholism. In one he obtained from a few sittings the cure of the dipsomaniac fits, in the second an improvement, and in the third no benefit. He then remarks that suggestion made during hypnosis does not substantially differ from that to which a drunkard submits himself when he is admitted into a temperance society and pledges himself

to abstain from drink. Hypnotism in such cases simply favours the good intentions suggested to the alcoholicist.

Castelli and Lombroso relate the case of a girl affected with grand hysteria who, after mental distress, became melancholy, with delirious ideas, refusal of food, and agitation. She was cured by suggestion; and by the same means a severe headache and paresis in the right lower limb was removed. Bernheim in his ample case histories furnishes some observations of hysteric disturbances cured by suggestion. Brémont by a single sitting cured a woman of twenty-five years, who after child-birth became sad, and felt aversion towards her husband and children, and manifested ideas of damnation. The same author cured, by hypnotic suggestion, a man of forty years, addicted to alcohol and morphin, which had produced hallucinations with insomnia, agitation, refusal of food, and attempts at suicide.

Fontan and Ségard relate three cases of alcoholic insanity and one of hysterical mental disorder cured by hypnotic suggestion. Séglas subjected to this treatment a woman affected for a long time with melancholic delirium, insomnia, hallucinations, and suicidal tendencies, and obtained a favourable result.

Perronnet records a case of cure in a woman affected with hysterical mania. In the Phreniatric Congress at Sienna, Ventra communicated the case of a girl affected with hysterical insanity, and hemiparesis and hemianæsthesia of the right side. After hypnotic suggestion these morbid phenomena disappeared. In some cases of hysterical psychosis, Forel found hypnosis, either alone or associated with suggestion, useful in inducing sleep and quietude.

Amadei by this means cured a woman affected for two years with hysteric dumbness, and Dumontpallier saw an attack of lypemania pass away after a single sitting in a hysterio-epileptic woman. From an examination of these cases, Seppilli comes to the conclusion that hypnotic suggestion may be effective in dipsomania and in forms of hysterical insanity; but, from an examination of cases in which the treatment was tried in other forms of mental disease, he is of opinion that, excepting a few cases, no favourable results were obtained. Obersteiner asserts that the insane are, in general, very difficult to hypnotise, and Ventra asserts that he found it impossible, notwithstanding repeated and patient trials, to obtain the hypnotic sleep in any form of insanity except that of hysteric origin. Vizioli tried without effect in a case of melancholic delirium almost all the known methods employed for provoking hypnotic sleep, and he, too, admits the refractibility of the insane to hypnotisation.

Bernheim, Bottez, and Mall likewise, and all who have latterly been specially engaged in the study of hypnotism, admit that it is very difficult to hypnotise an insane person.

After a lengthened examination of all the facts as yet recorded, and as the result of continued personal experience, Seppilli considers that he may assume the following principal conclusions:—

1. Therapeutic hypnotic suggestion cannot be instituted as a general means of cure in the treatment of mental diseases owing to the difficulty of hypnotising the insane.

2. Hypnosis succeeds most readily in the hysterical and epileptic.

3. The most certain results of hypnotic therapeutic suggestion have up to the present time been obtained in the psychoses depending on hysteria and dipsomania.

4. Hypnotic suggestion may be employed when the insane submit to it of their own accord, and derive benefit from it. The physician should use it with great caution and take account of the hurtful effects which in certain cases may be produced.

5. Therapeutic suggestion made in the waking state is the most reliable and effective means of cure in mental diseases, and to it almost solely are due the beneficial effects of the asylum, which represents a real suggestive surrounding.

6. In cases of melancholia without delirium, cases of fixed ideas, cases of alcoholism, and in slight forms of stupor, suggestion methodically repeated in the waking state in order to combat the morbid phenomena may prove effectual.

7. In the chronic form of paranoia suggestion has never given favourable results.

Chloralamide.—Dr. John Gordon (*Brit. Med. Journ.*, 16th May, 1891) contributes an article on the action of this drug. He records an interesting series of physiological experiments conducted to determine the influence of the drug on the cardiac, respiratory, and cerebral centres, on the functions of digestion, and on its value as a hypnotic. Clinical observations on the effect of chloralamide as a hypnotic were made on a number of cases of insomnia from various forms of disease. The results gained here are as follows:—Pain as a cause of insomnia was not easily combated by chloralamide, though where the pain was moderate the drug was fairly reliable. In painless insomnia excellent results were obtained. Hypnotic action usually followed within half an hour. There was no tendency to deferred action, such as is not uncommonly witnessed with sulphonal. The sleep was tranquil and natural; no craving was

noticed. The most reliable doses were 30 to 45 grains. Excitement, giddiness, inco-ordination, headache, indeed many of the features of alcoholic intoxication, sometimes follow the use of chloralamide.

Dr. Gordon found chloralamide very satisfactory in the treatment of the insomnia of old age, hysteria, and pulmonary diseases.

Note on Chloralamide.—Dr. Warren B. Chapin (*N. Y. Med. Journ.*) says:—The cases in which I have used chloralamide have been mostly those of insomnia of a very persistent character, in some of which all the other hypnotics had failed. Although my experience with the drug has been mostly confined to one class of cases—those of insomnia depending upon some nervous affection—I have seen enough of its action to convince me that not only does it fail to possess all the virtues attributed to it, but owing to its uncertain action and the many unpleasant symptoms it produces, it is inferior to most of the new hypnotics.

Uralium.—Tambroni and Stefani (*La Psichiatria*, VIII., 1 and 2) conclude the publication of results of extended therapeutic investigations on this drug, which is a compound of chloral and urethan combined according to their respective atomic weights. They speak highly of its hypnotic action, and they find that its best effects are obtained from doses of from two to three grains. They find little difference from the effects of the medicine in the different forms of insanity, though it seems to be a little more adapted to excited than to depressed conditions. The sleep it causes commences usually within an hour of its administration, and lasts then to seven hours. It is rather light, and comes very near to physiological slumber. Uralium has, like sulphonal, the property of continuing its hypnotic action for more than one night, and it may be administered for a long time to the same individual without causing serious disturbances, and without engendering a tolerance of the remedy. In a few cases the patient complained of a certain feeling of weight in the head on awakening. The authors conclude as follows:—“We are able to say that uralium, in doses of two or three grains (?), has a considerable hypnotic value not inferior to that of chloral, and superior to that of paraldehyde, urethan, hypnone, hyoscyamine, and perhaps to that of sulphonal also; that its use is free from any inconvenience; that it may be protracted over a long period, and that it should be classed among the better hypnotics.”—(*Am. Journ. of Insanity.*)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRAPS FOR THE UNWARY.

An Address introductory to the Clinical Session of 1891-92, delivered in the Theatre of the Meath Hospital and County Dublin Infirmary on Monday, October 5th, 1891. By RAWDON MACNAMARA, F.R.C.S.I. ; one of the Surgeons to the Hospital.

AMONG the traditions of the Meath Hospital there remains one of which I am this day the victim, and it is that our clinical work should be annually inaugurated by an Introductory Address delivered in rotation by one or other of the staff, and in virtue of this rotatory system the discharge of this duty has fallen to my lot upon the present occasion. In professional minds much difference of opinion exists as to the value of such Addresses—in some schools they are entirely ignored, in others the time-honoured custom is still respected; but I must confess that to me it seems, I might almost say, a cold-blooded measure to plunge at once *in medias res* without one word of grateful welcome to students who, preserving their allegiance to their *Alma Mater*, return here to continue their studies—one word of encouragement and it may be of warning to the student commencing with us his career—one word of God-speed to such of you as are about to qualify yourselves to enter upon life's struggle, and who probably are destined hereafter to be our successors, and upon whose shoulders will devolve the task of upholding the reputation won for the "Old Meath" by our predecessors. To such of our class as have qualified themselves during the year that has elapsed since my distinguished and much-loved colleague, Mr. Smyly, so brilliantly discharged the task that I, *proximus sed proximus longo intervallo*, am now essaying, personally, and on behalf of my colleagues, I tender our warmest congratulations, and I desire most earnestly to assure them of the deep interest each one and all of us take in their future success.

From our first entrance on professional life to its termination, our paths are beset by what I term traps for the unwary, and to some of these I would wish to draw attention upon the present occasion. The first of these traps is found in the fact that in but too many instances

the choice of a profession is not left to the party primarily interested in it, but is decided for him, irrespective of the young man's vocation, by some outsider, whether parent, guardian, or other responsible party. To the majority of our students there must be something singularly attractive in the study of medicine, else would they not struggle on through what is admittedly *per tædia et labores* to attain the object of their ambition. But there remains a minority to whom each succeeding day's duty makes their task more repulsive, and if there be such a one amongst you, to him would I give the advice given by Queen Elizabeth to Sir Walter Raleigh on a memorable occasion, "If your mind fail thee, climb not at all." Seek for the talents with which Providence has blessed you some other outlet more congenial to your tastes. In my own experience I am aware of several instances where the course I am now recommending has been pursued—one instance occurs in the person of one of our leading Dublin solicitors, another in the person of a distinguished cavalry officer, another in the person of a colonel in the artillery, and yet another in the person of a leading London barrister—all of these commenced their career as students in this Hospital, but finding that they had no vocation for medicine, they gave up its study and betook themselves to more congenial occupations, wherein they respectively gained subsequent distinction.

The most remarkable example, however, constitutes what I look upon as an historic episode in the Meath Hospital history—an episode which has not been recorded in its annals, either as furnished us by our Standing Committee, or by Dr. Ormsby in his most interesting History of the Meath Hospital. Early in the year 1871 the prelate whose recent death the Christian world is still deploring, the Archbishop of York, at that time Bishop of Peterborough, stopping on a visit in this city with his old friend Dr. Newell, C.B., and suffering from an anthrax on the back of his wrist-joint, sought the services of one of our surgical staff, and on the termination of the treatment asked the surgeon in question what was his fee; the surgeon replied that he was afraid that his lordship would consider his demand exorbitant, but that the only fee that he would accept was a charity sermon in aid of the funds of the Meath Hospital. After a moment's reflection the bishop consented to preach the sermon, but pressed the surgeon himself to accept a cheque for his services, to which the reply made was—"No, my lord, the sermon, the whole sermon, and nothing but the sermon," and so the matter was arranged. Months elapsed, the bishop had long returned to his diocese, and the occurrence had entirely slipped the surgeon's memory, when one morning he received a letter from the bishop stating that he was prepared to come over at his own expense, and to preach the sermon on any of the four Sundays named. The sermon was preached in St. Ann's Church, on Sunday, the 13th of November, 1871, and there accrued to the funds of the hospital the sum

of £109 6s. 3d. But what points the moral of my tale remains to be told. The bishop informed us that his first start in life was as a medical student for six months in the wards of the Meath Hospital, but, finding more congenial work in the service of his Great Master, he made up his mind to abandon medicine in favour of divinity. Am I not justified in saying that such an historic episode as this is worthy of being recorded in our Annals?

The second trap that awaits the student at the commencement of his professional career has, I regret to state, been laid for him by an august body of which, as the representative of the Royal College of Surgeons in Ireland, I am a member—I mean the General Medical Council. In their wisdom they have made Greek an optional instead of a compulsory subject at the Arts Examination, which must be passed previous to registration as a medical student. This procedure has been justified by some on the score that Greek is a dead language, but to medical practitioners it is a more living language than any modern one, so many are the terms supplied by it to our nomenclature; in fact, one cannot now-a-days read any of our journals without meeting terms of which we have never heard before, and of the meaning of which we would remain in ignorance had we not even some slight acquaintance with the Greek language. So much so is this the case that the thought has flashed across my mind that authors who indulge in such a display of classic erudition might well, in mercy to their less learned readers, append glossaries to their papers.

To understand the next trap into which even the industrious student may fall, I must be permitted to explain the important distinction which, in my mind, exists between clinical lecturing and clinical education. In the first of these, too often but one of the student's senses is appealed to—that of hearing; he is told this, that, and the other, but no effort is made to induce him personally to bring into play his remaining senses. In clinical education he is not told what he is to hear, see, feel, or smell, but he is asked what he does hear, see, feel, or smell, and if wrong he is set right, and after a few such lessons he at last learns correctly to use these senses. The proper use of your senses is not so simple a matter as you may imagine; to do so efficiently requires, in the etymological sense of the word—education, and at that all conscientious clinical teachers should aim. The *vis inertiae*, however, is so deeply planted in human nature that with many students the clinical orator is frequently more popular than the painstaking clinical educator, but in after-life, however, they are sure to find out how mistaken they have been in their estimate.

In alluding to one of the senses, that of smell, I will not be surprised did you smile, but frequently from it alone will the experienced physician gain a hint of paramount importance, one remarkable example of which statement I shall mention. When resident surgical pupil in this hospital I was carrying round his prescribing book with the late Pro-

fessor Porter, and in one of the wards upstairs we came to the bedside of a patient, where that great surgeon paused, then, turning to me, said, "Stop this man's mercury," and, pulling down the bedclothes, exhibited to my astonished gaze a well-marked example of mercurial erythema, for which he prescribed appropriate treatment. I cannot put in words the feelings that thronged my mind at what seemed to me an exhibition of superhuman surgical acumen, but when subsequently he honoured me with a visit in my room, an honour of frequent occurrence, I timidly asked him how, without seeing it, he had diagnosed the existence of the erythema, he replied, "I smelt it," and from subsequent experience I can assure you that it is an odour once experienced that will never be forgotten. Believe me, gentlemen, that the Horatian maxim—

"Segnius irritant animos demissa per aurem,
Quam quæ sunt oculis submissa fidelibus"

is applicable to other senses than that of vision alone.

Another trap that awaits the unwary student originates in the fact of his completely ignoring the class of diet ordered for the patient under treatment. Many are the students who complete their hospital attendance without even once casting a glance at the dietary sheet which hangs in each of our wards, and yet when he goes out into practice and is called upon to treat a sick person, one of the questions invariably asked is, What nourishment is the patient to get? This, and another frequently-asked question, How did the patient contract the disease? constitute two out of several subjects comprised in that most important branch of our profession—Hygiene—under the names, dietetics and ætiology. So much to the front has this subject of hygiene come, that the legislature has sanctioned the registration of diplomas in it, conferred on terms satisfactory to the General Medical Council, and valuable and important letters emanating from the pens of Drs. Boyd and Roche have lately appeared in the public press, urging upon the consideration of the several medical authorities the propriety of introducing into their curricula courses of lectures upon sanitary science; but, in my opinion, the movement will not stop there, and many years will not have elapsed ere, in addition to the qualifications in Medicine, Surgery, and Midwifery, now indispensable for admission to the Medical Register, a short Act of Parliament will be passed, requiring a license in Hygiene at the hands of candidates seeking such registration.

A remarkable illustration of the importance of the careful study of that branch of hygiene which treats of dietetics is to be found in the well-known request of our great Graves, that the epitaph inscribed on his tomb should consist of but three words—"he fed fever;" and, connected with this, I once was witness of an amusing scene in the clinique of the celebrated French physician, Trousseau, who was an ardent admirer of Graves, and who had translated into French his lectures on the practice

of medicine. Suddenly interrupting his conversation with me, in a voice of thunder he addressed a crouching, trembling figure at the door of the ward—"Voilà le coquin! voilà le vilain! Malheureux venez ici donc." He then explained to me that, wishing to use these three memorable words as a motto for the work, he rendered them "*Il nourrissait les fièvres*," but to his dismay they appeared "*Il pourrissait les fièvres*" (made them putrid). The trembling creature was the printer.

If there breathes a man with soul so dead to humanitarian instincts as to be indifferent to the diminution of a nation's death roll, appeal to his pocket, point out to him that unsanitary conditions mean sickness, possibly death, with poverty, discontent, and increased rates, whilst the opposite conditions are attended with opposite results, and you will quickly win him over to the cause of hygiene. At the same time I scarcely think it fair that the existing population should be called on to bear all the expenditure that may be necessary; posterity which will benefit by the outlay, should assist in defraying the costs. It has been convincingly proved that by improved sanitation the death roll in our Indian army, which some years ago stood at the rate of sixty-nine per thousand, has been now reduced to less than twenty per thousand, but not only this, that it has resulted in an annual saving of expenditure to the amount of five hundred thousand pounds; and pretty much the same story can be told of our home army.

Another trap lying in our path is found in our disregard of the advice given us by Pope—

"Be not the first by whom the new is tried,
Nor yet the last the old to lay aside."

Never perhaps in the history of medicine has there been a period of greater unrest in our profession than we have experienced in the past quarter of a century. New medicines have been forced upon our notice, and, but too frequently, to the supplanting of older and more valuable medicines of the same class. Surgeons' minds have been exercised in devising operations for the relief of diseases previously considered outside the pale of their art. Physicians have been earnest in their efforts at the elucidation of hitherto obscure, in some instances unrecognised, symptoms. But perhaps in no department have we more strained after new departures than in our search for reliable antiseptics. It is perhaps but natural that the pioneers in these respective branches should ignore Tallyrand's advice, "*pas trop de zèle*," and vehemently force upon our acceptance their respective views. Here it is that I would wish to press upon their consideration the advice given in this very theatre to the assembled class by my venerated master, the late Sir Philip Crampton:—"Gentlemen, when you mount your hobby horse, be sure that you do not ride it to death;" and to urge upon your consideration Pope's advice and the propriety of exercising a due amount of reflection and of caution in accepting as gold that which only glitters.

Bearing upon this subject of antiseptics, some years past I was considered a fossil, because I would not bow down and worship the carbolic acid spray, which *en passant* I may remark was as frequently as not directed upon the operator's back instead of on the patient's wound; however, time has passed, and we do not hear its advocates now-a-days as trumpet-tongued as to its efficacy as was formerly the case. Gentlemen, let no antiseptic, no matter how loudly vaunted, no matter how high be the authority advocating it, blind your eyes to the paramount importance of nature's own two antiseptics—fresh air and pure water. In a time not so long past every effort was made to exclude from the sick room the night air, and it remained for Florence Nightingale to point out to our common sense that the only air we could breathe at night was night air, and that the fresher it was the better it was for the invalid. Whilst it remained for our great Macartney to insist upon the value of water-dressing as a substitute for the farrago of unguents previously in use under the name of “digestives,” curiously enough, frequently is this great advance in surgery erroneously attributed to that great surgeon, Liston. Well might Macartney, if made aware of this fact, exclaim from his grave, with Virgil—

“Hos ego versiculos feci, tulit alter honores.”

In addition to his other valuable contributions to surgery, my colleague, Mr. Smyly, has devised a plan for utilising this most efficient antiseptic in our operative procedures in this theatre, a plan by which the wound can be thoroughly cleansed by irrigation with water at any required temperature, a plan well worthy of adoption in similar institutions. This carbolic acid spray had, however, not been altogether devoid of value, for, believing in its virtue, surgeons have been emboldened to undertake, under its influence, operations, notably abdominal sections, for the relief of diseases previously considered unsuited for operative interference, and the brilliant results seemed to justify its claims to importance. However, equally brilliant results have been attained in a long series of abdominal sections by my friend, Mr. Lawson Tait, of Birmingham, who dispenses altogether with its employment. Believe me, gentlemen, that nature's antiseptics are those upon which you should place your greatest dependence.

The next trap into which we all are likely to fall, and the most dangerous of all, inasmuch as the bait employed has about it an appearance of science, is Medical Statistics. For many reasons to which I shall presently allude, in my opinion it may be laid down as an axiom that the statistics of the coincidences affecting our lives are but too often misleading, whereas the statistics based upon finalities in life are reliable and guiding. Statistics to be of any value must be based on figures, and these figures must be exhaustive and accurate. Anti-vaccinators triumphantly base their opposition to Jenner's immortal discovery on statistics,

pointing to the numbers who, after vaccination, develop some form of disease. That this is the fact I admit, but I deny their contention that the virus was introduced into the baby's system through or along with the vaccine matter employed. Upon one of these alleged examples, and, probably, the most likely, I venture to speak with some authority, inasmuch as I see many such cases, and never yet have I failed in ascertaining that what apparently was due to the vaccination was really due to the fact that the sins of the parents had been visited on the offspring. Often has it happened to my knowledge that infants have been born of undoubtedly specifically diseased parents, and have exhibited no taint of inherited disease up to the period of dentition, when the result has proved that after all it was but a case of *latet anguis in herba*. As in the case of dentition, so I hold that it is in vaccination, the resulting fever has acted as a ferment developing the lurking disease, and fortunately at an age when I find it easier to cure than did it develop itself at a more advanced period of life. In my opinion an outcry against dentition might be sustained on as reasonable grounds as is the outcry against vaccination, for I have at this moment three little babies suffering from varying forms of cutaneous affections, the outcome of dentition, where there is not even a suspicion of specific disease. To my mind it is incomprehensible how any person blessed with memory and endowed with powers of observation, arrived at my age, could be an anti-vaccinator. Why, when I was a boy, the number of middle-aged people one met disfigured with smallpox was simply appalling; now I challenge my youthful hearers to go beyond the fingers of one hand to enumerate such of their acquaintances as are so disfigured. Anti-vaccinators, not being able to deny this fact, try to account for it by our improved sanitation. But the question may be fairly asked, Has sanitation kept pace with non-disfigurement by smallpox?—a question that, considering the condition of the slums in our large cities, and, indeed, in many of our rural districts, must unfortunately be answered in the negative. To reason with anti-vaccinators would, however, be simple waste of time, for—

“Faddists convinced against their will,
Are of the same opinion still.”

In the 71st Volume of the *Medical Press*, page 422, will be found a paper emanating from my pen, entitled “A few words about Cancer,” in which I made an effort to solve what even to this moment with me is a moot question—whether a patient afflicted with cancer of the breast would not live longer if not subjected to operative interference, than if so treated. This question was forced on my consideration by the fact that I had at the same time under my care two titled ladies, suffering from cancer of the breast; one, Lady B., laboured under the disease over twenty years, steadily declining any operative interference; the second,

Lady W., on the occasion of a visit to Dublin, was commended to my care by that most eminent surgeon, the late Mr. John Marshall, President of the General Medical Council, whose patient she had been, and who had removed the breast some time before, and that at an early period of the disease. Lady W. returned to London, the cancer burst out afresh, not only in its original site, but in other parts of the body, and she died before Lady B., who never had been operated upon. Many such cases have presented themselves to my notice, but one of the most remarkable was mentioned to me a short time ago, by my colleague, Mr. Hepburn, occurring in the person of one of his patients suffering from cancer in *both* breasts, a diagnosis in which he was confirmed by Mr. William Colles; this was ten years ago, no operation was performed, and for some years not having seen or heard from her, he concluded she was dead, but to his surprise met her the other day, to all outward appearances in good health. My friend, Mr. Thomson, has also mentioned to me many remarkable instances occurring within his own experience. With the object of trying to solve this question by statistics I wrote the paper I have referred to, but for reasons there assigned I found it a hopeless task. In the *Review of Reviews* for January of this year there is an article, entitled "Can Cancer be Cured?" in which an account is given of Count Mattei and his plan of treatment, and in which, as bearing upon the question of operative or non-operative interference, occurs the remark that the Count rather objects to undertaking the treatment of cases *that have been previously operated upon*, preferring to get those who never have undergone the ordeal of the knife. Mr. Stead is very indignant with all parties concerned that a Commission has not been issued to investigate the Mattei plan of treatment, but the outcome of such Commissions frequently proves of but little or no value, a notable example of which is found in the instance of Miss Joanna Stephens' receipt for stone and gravel, for the disclosure of which Parliament awarded a grant of £5,000; previous to which award a Committee of Surgeons had reported favourably on its efficacy in the treatment of four persons afflicted with stone in the bladder, in the bladder of each of whom, however, after death the stone was found.

A justum bellum is being carried on between the advocates, on the one hand, of ether, on the other, of chloroform, as to which is the safer anæsthetic—some etherites, as I shall call them, going so far as to assert that the administration of chloroform should be considered a criminal act. The etherites, however, cannot deny that fatal results have followed the administration of ether, but they claim for it that fewer deaths follow its administration than occur when chloroform is the anæsthetic selected. In other words, they appeal to statistics. As I have already stated, statistics must be based on figures. But where can we arrive, with any pretence to accuracy, at the number of cases in which ether and in which chloroform was used, so as to institute a reliable compa-

rison as to the greater safety of one over the other? 'Tis true that in his most interesting and most instructive work, "Anæsthetics; Ancient and Modern," Mr. George Foy places on record a prodigious number of cases in which chloroform was employed. But even he would not claim that he has exhausted the record; and, so far as I know, the task with respect to ether has not been even approached to anything like the same extent. But, even supposing that we had the figures accurately supplied to us with the results, the absence of certain necessary factors would render the comparison nugatory. Primary amongst these factors is the party administering the anæsthetic, who, when an untoward result occurs in his practice, frequently lays the blame on the patient's idiosyncrasy, ignoring his own carelessness. Let us take a case. A patient has had ether administered with a satisfactory result by a careful administrator. On some subsequent occasion it is attempted to bring him again under its influence, but he dies, at once idiosyncrasy is pleaded. Now, were it the cause of death, he would have died on the occasion of its first administration, for, in my experience, idiosyncrasy never sleeps.

The induction of anæsthesia by ether is based upon principles entirely differing from those which should guide us in the administration of chloroform; and these principles are admirably carried out in Dr. Ormsby's inhaler. With this instrument the patient certainly runs less risk, if the administrator be experienced, than he would run were chloroform the anæsthetic selected; and ignorance of these principles can alone excuse those who deny its merits. This, however, is not the time nor is this the place for me to enter upon the comparative merits of these two anæsthetics; my object is to point out how very unreliable must be statistics which ignore all the factors tending to produce fatal results during the administration either of chloroform or of ether. These should be accurately recorded; and in the case of chloroform, for reasons clearly laid down in the seventh edition of my work on "Medicines: Their Uses and Mode of Administration," one item, rarely attended to—the temperature of the surrounding atmosphere—should be carefully noted.

Strange though the statement may appear to you, gentlemen, there is a fashion in medicine as strong as, if not stronger, than that which rules in dress. Brandy and salt, the grape cure, mesmerism, *et hoc genus omne*, have had their day, and possibly will have it again. When I was a student venesection was extensively practised, and comfortable incomes were earned by cuppers of such repute as Betts, Minos, and Mapleson; and no surgeon was admitted into the military service without the production of a certificate of proficiency in this art from some recognised authority. So universally general was the operation of venesection that it was no unusual thing for me to bleed of a morning some eight or ten patients, and from some vague presentiment I kept a record of such cases, to which our great Stokes referred in his celebrated address at Oxford,

“On the change of type in disease”—names, age, arm, quantity of blood abstracted, are all set down; but one entry is most remarkable, one quart of blood abstracted, and the letters “d-n-f” appear before his name. The man was a patient of the late Professor Porter, father of the distinguished Baronet bearing that name. He suffered under thoracic aneurism, and I was directed to bleed him *pleno rivo, ad deliquium*, but when I had taken forty measured ounces of blood from his arm, I got frightened, bound up the wound, and put him to bed. The letters “d-n-f” signified that he did *not* faint. Shortly after the period to which I am referring, bleeding went out of fashion, and to have recourse to it was considered little short of being a criminal act. But now the pendulum seems to be swinging again in favour of venesection, and in properly selected cases it may save a valuable life. One night, some years ago, I had just retired to bed, when a loud knocking was heard at my door, and the dearly-loved son, whose loss I shall never cease to deplore, rushed into my room exclaiming, “Father, there is a gentleman dying in your study, come down at once!” I hurried down and found, sure enough, a gentleman at the point of death. I quickly bared his arm, and, to my son’s horror, proceeded to bleed him. At first the blood came like tar, but by degrees its normal flow and colour returned; and, after some twenty ounces had been abstracted, the gentleman exclaimed, “Thank God, I am as well as ever I was in all my life!” and left my study apparently as well as any man could wish to be. I leave it to my medical colleagues to explain to you, as they are well able to do, the rationale of this sudden seizure, for it came on suddenly, and why it was that the treatment was so successful. I believe that, now-a-days, surgeons might be found, who have skilfully and successfully performed all the major and minor operations in surgery who never yet have bled a patient, so complete has been the interregnum.

Gentlemen, my task, not a self-imposed one, I can assure you, and by no means of the nature of the *gratum opus agricolis*, is now concluded; and it only remains for me to assure you that each one and all of us will gladly assist you, to the extent of our abilities, in your clinical studies, you bearing in mind Lord Bacon’s aphorism, “He that questioneth much learneth much;” and to express the anxious hope that, as in the olden days, his proudest boast was, “*et ego civis Romanus sum*,” so will it be your proudest boast, your happiest memory, as it is mine, that you will be able to exclaim, “I also was a Meath Hospital student.” Adopt as your guiding maxim through life the advice given by his grandfather to Neoptolemus on his proceeding to the Siege of Troy—

“*αἰὲν ἀριστεύειν καὶ ὑπείροχον ἔμμεναι ἄλλων.*”

—*Iliad* vi. 208.

OUR EYES AND OUR INDUSTRIES.^a

By ARTHUR H. BENSON, M.A., F.R.C.S.I.

THE subject which I have chosen for my lecture is one which, in the past, has not received the attention to which, I think, its importance entitles it. The word "sanitary" has been so intimately associated in people's minds with the idea of foul smells, main drains, and plumbing that there has been a tendency to limit its meaning, and consequently the operations of Sanitary Associations within too narrow limits.

Sanitary science has to do with all that concerns the health of the body, and therefore its object is to obtain the due performance of every function of every organ in each individual in the community. I may, therefore, be pardoned for venturing to treat of one organ in particular on this occasion, the due performance of whose functions is of such vital importance to each individual, and to the community at large. There are 300,000 blind people in Europe. About three per cent. of these were born blind. A vast majority of the remainder are blind from preventable causes.

"It is hardly possible," says von Graefe, "for those who are in possession of strong healthy sight to estimate at its full worth the part which the eye plays in the development of the mental powers in forming our views of the world around us, and in the relationships which exist between man and man. Orators have praised the eye, poets have sung to it, but its full worth lies hidden away in the silent yearning of those who have once possessed, and now have lost, its light."

The eye, as you are all aware, consists of a globe or hollow ball of strong opaque fibrous tissue (sclerotic), the white of the eye, the anterior portion of which is transparent (cornea). This globe contains all the complex structures that compose the eye. Lining this white external covering, and in contact with it, is a dark brown, almost black, membrane (which also contains blood-vessels—the chorioid) which serves in the eye the same purpose as the black lining in an opera glass, and absorbs the useless rays of light after their passage through the retina.

Inside this black lining, and in contact with it, lies the nervous expansion (the retina), the essential part of the eye, to which all the other parts are subsidiary and only minister to its needs. This nervous expansion is a most complex and highly specialised structure. It is in the most intimate connection with the brain from which it is, both anatomically and embryologically, a direct prolongation. It is on this retina that the

^a Being the substance of a popular lecture delivered in Dublin in connection with Preventive Medicine.

picture of the object looked at is formed, and in order that any object may be clearly seen it is essential that the picture should be in exact focus on the retina.

The remainder of the globe of the eye is filled with transparent structures which act mechanically, keeping the essential parts in their normal positions, and regulating the rays of light which enter the eye so as to converge them to a focus on the sensitive layer of the retina.

The largest portion of this transparent medium consists of the gelatinous vitreous humour. In front of this is suspended the crystalline lens, and in front of it again is a watery fluid called the aqueous humour. This occupies the space between the clear transparent cornea in front, and the transparent crystalline lens behind.

Suspended in this watery fluid lies an opaque curtain (the iris) with a circular hole near its centre (the pupil).

This curtain is in direct continuation with the dark lining (the choroid) of the inside of the globe, of which I spoke before, and it is to it that the eye owes its distinctive colour—blue, gray, or brown.

The central, circular, black pupil seen in every eye is the hole in this iris or curtain, and it looks black somewhat in the same way that a window in a house looks black when viewed from outside by daylight, because there is so much more light outside than within the room.

The pupil is capable of being made larger or smaller by the contraction of the muscular fibres of the iris; it thus acts as an automatic regulator of the amount of light admitted to the retina. The more light falls on the eye the smaller the pupil becomes, whilst the definition of the image is increased. The pupil also becomes smaller when the eye looks at near objects.

As we said before, in order that any object may be clearly seen, it is necessary that a picture of it be accurately focussed on the retina. It therefore follows that there must be, in the eye, some mechanism by which its focus can be readily changed—for objects situated at varying distances, though they can be each clearly seen by the eye, cannot be so seen simultaneously. You can easily note this fact if you regard two objects in the same line, but at different distances from you—your finger, for instance, and a lamp-post. Now, if you look at your finger so as to see it clearly, the lamp-post will not be clearly seen; and if you try to look at the lamp-post so as to see it clearly, the finger becomes indistinct. It thus becomes necessary to suppose some force within the eye capable of changing its focus according to the requirements of each act of sight. This mechanism is found in the action of the ciliary muscle upon the crystalline lens.

When a beam of parallel light passes through a convex spherical lens it is bent in such a way that the rays composing it are all directed towards one spot where they meet and form a focus. The stronger the

lens (that is, the more convex it is) the nearer is this focus ; the weaker the lens the further off is the focus formed. Again, the nearer the object from which the light comes, the more divergent are the rays, and consequently the further off from the lens will be the focus formed. It, therefore, can be seen that when an object is brought close to a lens the position of the focus changes, and if it is essential that the position of the focus should remain at a fixed distance, as is the case in the eye, it is necessary that the lens be made stronger, that is, more convex, and this is just what occurs within the eye.

Within the eye, at the grand junction where all the several parts become contiguous, there exists a circular muscle, called the ciliary muscle. It is more or less like an India-rubber ring. To its margins are fastened a thin membrane which holds the lens in its place as in a sling, and, at the same time, compresses its surfaces so as to keep it somewhat flattened when the ciliary muscle acts. When the India-rubber ring contracts, it diminishes the strain on this thin membrane which holds the lens. The lens then, acting under purely physical laws (when the strain is taken off), becomes convex, and consequently acts more powerfully on the rays of light passing through it to form a picture on the retina. This change in the strength of the lens is constantly being effected, but without any conscious effort by the individual, so long as all the parts are healthy and suitably adapted for their work ; but in many persons it becomes a source of extreme annoyance, and leads to trouble of serious and far-reaching importance, of which more hereafter.

We now see that a picture of the object looked at is formed on the retina of the eye, in just such a way as the picture is formed on the sensitive plate of the photographer's camera. The eye is, in fact, a *camera obscura* with an automatic adjustment for focussing. Instead of requiring to use a screw to change the relative distances of the lens and the plate as in the camera, the eye by its beautiful accommodation apparatus can, with marvellous accuracy and rapidity, change the strength of the lens, leaving the position of the focus unaltered.

Each eye is moved about an imaginary point near its centre—called the centre of motion—by the action of six muscles situated external to the globe. These muscles give to the eye a vast variety of movements, so that both eyes can easily and accurately be directed simultaneously towards the object looked at without any appreciable change in its general position. It has, therefore, been paradoxically said that the eye is the most movable and the most immovable organ in the body.

In order that an object may be clearly seen by both eyes it is not only necessary that a clear picture of it should be formed on the retina, but this image or picture must be formed on a particular part of the retina, the most sensitive portion called the "yellow spot," which is situated nearly at the posterior pole. It is, therefore, necessary that the two eyes

should move in unison, so that each may simultaneously obtain an almost similar picture on a corresponding portion of its retina.

The normal eye, in looking at a distant object, requires to use no focussing power, but to see a near object it does require to exercise this power, and the nearer the object the stronger is the effort required.

Some eyes are not properly shaped, they are too flat, like fishes eyes; such are usually small, badly developed eyes, too short from front to back. These are the over-long-sighted eyes, or the hypermetropic eyes as they are called. Such eyes require to use their focussing power at all times, both for seeing things near and far, hence they suffer from fatigue. Other eyes are over-grown. Such eyes are too large and too long from before backwards. They are the eyes that suffer from the condition known as "short sight," or myopia, as it is technically called.

Such eyes cannot see any object clearly until it is brought to within a short distance of the eye, because the clear picture of a distant object is formed within the eye in front of the retina, not on it.

Again, there is another most interesting and important formation of eye which consists of a combination in the same eye of two of the above conditions, or of varying degrees of the same peculiarity in different parts of the eye. This condition is known as "Astigmatism," and as such an eye can never obtain a clear picture of all parts of an object at any one time, it is productive of the greatest amount of trouble to its owner. It is usually caused by the cornea or the lens being unevenly curved in one or more directions, so that objects looked at are more or less indistinct and distorted in shape according to the degree of the astigmatism. You have all, no doubt, noticed the strange distortion produced in objects looked at through a pane of badly rolled window glass. As you move your head while looking at a distant object through such a sheet of glass you notice its strange and varied distortions, now elongated in one direction and shortened up in the other, again thrown to one side or flattened where it was round—a very Proteus of changing form. That is irregular astigmatism.

There is yet another peculiarity of very common occurrence which frequently gives rise to a degree of annoyance only surpassed by the condition just described. I allude to the condition known as anisometropia. This long word only means that the eyes have not the same focus, that they are not fellows, so to speak, that they are not properly matched; in fact, that you have been given eyes that cannot harmoniously work together. Each may be very good of its kind, as a horse and a donkey are both excellent animals, but it does not do to harness them under the same carriage. So with the anisometropic eyes.

All these conditions can be relieved by the use of suitable spectacles to supplement the optical defect in the construction and shape of the eye. And were it not for the ignorance and prejudice with which spectacles

are still treated, especially by the employers of labour, many an one now miserable might be happy in the enjoyment of strong and useful sight.

The detection, however, of these anomalies is often difficult, and their correction taxes to the utmost the skill and scientific resources of the most educated oculist, and cannot be done by rule of thumb, or any every-man-his-own-doctor kind of knowledge.

Having now very briefly given, in outline, the principal optical peculiarities to which the eye is subject, it is necessary to inquire what are their causes, what are the conditions under which they arise, and what are the best means of avoiding the inconveniences and injuries they produce.

The flat, insufficiently developed eyes, or, as we called them before, the over long-sighted (hypermetropic) eyes and the astigmatic eyes, are usually congenital, that is, the child is born with the peculiarity, or at least with the tendency to its development as the eye grows. As these conditions have no tendency to continuous increase, they are not a source of much danger once their presence is recognised, and the defect corrected by suitable glasses. Such eyes call for a very strong effort of their focussing mechanism, hence are subject to trouble of three kinds—difficulty in reading, writing, sewing, or any close work—headaches often most persistent, and very frequently squint.^a “Many a child has been scolded, slapped, and even beaten before now, because he wouldn’t do what he *couldn’t* do for want of a pair of spectacles.”

“Many a child has been dosed and put to bed to cure a headache, which could only be cured by a pair of spectacles. Many a child has grown up with a squint, or has undergone an operation, which a pair of spectacles, used in time, might have prevented. With regard to squint, there is a notion abroad that squint is catching, acquired by imitation, one person of another. In reality, it is about as catching as a broken leg or a double chin. In nine cases out of ten a child who squints does so because he has flat eyes and requires spectacles.”

In cases of over-grown eyes or short-sighted (myopic) eyes, the causes at work are far more complex, and the condition is one which has attracted the serious attention of many of the ablest minds. Professor Donders, of Utrecht, struck a note of warning when he wrote “Progressive short sight is in every case ominous of evil for the future.” (“Jaide progressive Kurzichtigkeit ist für die Zukunft bedenklich.”) High degrees of short sight not only interfere much with the personal comfort and utility of the individual, but lead to many of the gravest diseases to which the eye is subject, and not infrequently result in total blindness, and that often suddenly with slight, if with any warning.

Moreover, the tendency to short sight can be transmitted by inheritance, so that each one who acquires short sight may himself transmit it as a legacy of evil to his children, and in this sense Professor Donders’ words

^a Priestley Smith—“Eyesight, and how we lose it.”

are profoundly true—"Progressive short sight is in every case ominous of evil for the future."

What, then, are the causes which, besides heredity, tend to induce it? Professor Cohn of Breslau, as well as many others, has worked diligently at the subject. He examined the eyes of 10,060 school children, and from these and other reliable statistics concludes that:^a—

(1.) "In village schools the percentage of short sight is very low, while in town schools the number of short-sighted scholars constantly increases with the grade of the school—from the lowest grade to the highest—so that the number of short-sighted children is in direct relation to the length of time during which the children's eyes are worked.

(2.) "In every school the number of short-sighted children increased from class to class.

(3.) "More than half the highest class were short-sighted.

(4.) And "the average degree of myopia rises constantly from the village school to the gymnasia."

These were remarkable results, and proved beyond question that the influences causing the myopia were school influences. Short sight was thus found to be "an unnatural condition caused, in the main, by overwork of eye and brain in early life. It very rarely began after sixteen or eighteen years of age. To prevent short sight it is necessary to prevent young people from using their eyes too long or too closely on near objects. It is a simple rule but not easily put into practice at the present day. The child's eyes must be at least twelve inches away from his book. You cannot make him do this by scolding him, but you can make him do it by more reasonable means. These are the means:—

He must have a comfortable seat with a support for the lower part of his back.

He must work at a sloping desk, not at a flat table. He must be so placed that the light falls from the left and from above, and that there is plenty of light. His books must be printed in good, large, clear type, so that he may be able to read them without the slightest difficulty at the proper distance.

He must be accustomed to read with the book propped well up in front of him, so that he may not need to stoop over it. He must be taught to write sitting square to the desk and upright, not twisted to one side, and bending over it. Both forearms must rest on the desk. These things must be attended to at home as well as at school.^b

^a Professor Hermann Cohn, M.D. "Hygiene of the Eye in Schools."

^b Priestley Smith. *Loc. cit.*

(To be continued).

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, October 10, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Sept. 19.	Sept. 26.	Oct. 3.	Oct. 10.		Sept. 19.	Sept. 26.	Oct. 3.	Oct. 10.
Armagh -	0·0	12·6	12·6	18·9	Limerick -	9·8	9·8	26·6	21·0
Belfast -	22·4	15·3	22·8	19·8	Lisburn -	30·1	30·1	12·9	17·2
Cork -	14·0	27·3	28·0	16·1	Londonderry	11·2	17·6	4·8	14·4
Drogheda	22·0	8·8	17·6	22·0	Lurgan -	18·4	41·4	18·4	9·2
Dublin -	21·0	27·9	25·1	22·2	Newry -	7·8	7·8	7·8	19·5
Dundalk -	15·6	15·6	23·4	7·8	Sligo -	36·4	10·4	31·2	20·8
Galway -	19·0	19·0	15·2	26·6	Waterford -	38·4	16·8	38·4	12·0
Kilkenny	23·5	28·2	14·1	23·5	Wexford -	4·5	9·0	27·0	22·5

In the week ending Saturday, September 19, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 17·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 15·4 per 1,000. In Glasgow the rate was 17·0, and in Edinburgh it was 15·1.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 19·8 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in twelve of the districts to 15·6 in Sligo—the 7 deaths from all causes registered in that district comprising 3 from enteric fever. Among the 110 deaths from all causes registered in Belfast are 2 from whooping-cough, 5 from enteric fever, and 9 from diarrhoea.

In the Dublin Registration District the registered births amounted to 185—99 boys and 86 girls; and the registered deaths to 144—66 males and 78 females.

The deaths, which are 25 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·0 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 20·4 per 1,000. During the first thirty-seven weeks of the current year the death-rate averaged 24·8, and was 2·8 under the mean rate in the corresponding period of the ten years 1881—1890.

Twenty-seven deaths from zymotic diseases were registered, being 7 over the number for the preceding week, but 7 under the average for the 37th week of the last ten years. They comprise 4 from whooping-cough, 4 from enteric fever, and 14 (including 13 deaths of children under 5 years of age) from diarrhœa.

Thirty-one cases of enteric fever were admitted to hospital, being 17 in excess of the number of admissions for the preceding week. Six enteric fever patients were discharged, 5 died, and 75 remained under treatment on Saturday, being 20 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 4 cases of measles, 1 case of scarlatina, and 1 case of typhus. Five cases of measles, 8 of scarlatina, and 5 of typhus remained under treatment in hospital on Saturday.

Twenty deaths from diseases of the respiratory system were registered, being 5 over the number for the preceding week, but 1 under the average for the 37th week of the last ten years. They comprise 13 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, September 26, the mortality in twenty-eight large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 19·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·8 per 1,000. In Glasgow the rate was 19·3, and in Edinburgh it was 16·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in nine of the districts to 9·4 in Kilkenny—the 6 deaths from all causes registered in that district comprising 1 from typhus and 1 from diphtheria. Among the 75 deaths from all causes registered in Belfast are 2 from whooping-cough and 10 from diarrhœa. The 39 deaths in

Cork comprise 1 from typhus and 4 from diarrhœa. The 9 deaths in Lurgan comprise 2 from diarrhœa. The Registrar of Lisburn District remarks that enteric fever is still prevalent.

In the Dublin Registration District the registered births amounted to 228—101 boys and 127 girls; and the registered deaths to 188—87 males and 101 females.

The deaths, which are 24 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·5 in every 1,000 of the estimated population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 27·2 per 1,000. During the first thirty-eight weeks of the current year the death-rate averaged 24·9, and was 2·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Thirty-six deaths from zymotic diseases were registered, being 6 in excess of the average for the corresponding week of the last ten years, and 9 over the number for the week ended September 19. They comprise 5 from whooping-cough, 3 from enteric fever, and 20 (including the deaths of 18 infants under 1 year old) from diarrhœa.

Thirty-three cases of enteric fever were admitted to hospital, being 2 over the number of admissions for the preceding week. Six enteric fever patients were discharged, 1 died, and 101 remained under treatment in hospital on Saturday, being 26 over the number in hospital at the close of the preceding week.

One case of small-pox was admitted to hospital during the week.

The hospital admissions for the week include, also, 2 cases of measles and 2 of typhus. Six cases of measles and 5 of typhus remained under treatment in hospital on Saturday.

Twenty-one deaths from diseases of the respiratory system were registered, being equal to the average for the corresponding week of the last ten years, and 1 over the number for the week ended September 19. They comprise 15 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 3, the mortality in twenty-eight large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 18·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·5 per 1,000. In Glasgow the rate was 17·3, and in Edinburgh it was 16·7.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 23·3 per 1,000 of the unreviſed population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts

were equal to an annual rate of 3·5 per 1,000, the rates varying from 0·0 in seven of the districts to 9·6 in Waterford—the 16 deaths from all causes registered in that district comprising 4 from diarrhœa. Among the 112 deaths from all causes registered in Belfast are 3 from whooping-cough, 7 from enteric fever, and 14 from diarrhœa. The 40 deaths in Cork comprise 1 from scarlet fever, 1 from whooping-cough, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 250—125 boys and 125 girls; and the registered deaths to 177—89 males and 88 females.

The deaths, which are 11 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·6 in every 1,000 of the population. A Revision of the Census Returns shows that the population of the Dublin Registration District on the Census night (April 5th, 1891) was 347,312, not 357,050 as derived from the Enumerators' Summaries. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 25·1 per 1,000. During the first thirty-nine weeks of the current year the death-rate averaged 25·0, and was 2·5 under the mean rate in the corresponding period of the ten years 1881–1890.

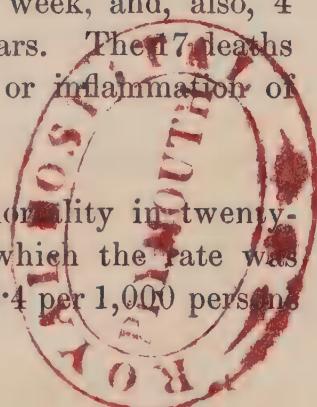
The number of deaths from zymotic diseases registered is 29, being equal to the average for the corresponding week of the last ten years, but 7 under the number for the week ended September 26. The 29 deaths comprise 4 from whooping-cough, 5 from enteric fever, 16 (including 15 deaths of children under 5 years of age) from diarrhœa, 1 from dysentery, and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital is 22, being 11 under the admissions for the preceding week. Nine enteric fever patients were discharged, 3 died, and 111 remained under treatment on Saturday, being 10 over the number in hospital on Saturday, September 26.

The hospital admissions for the week include, also, 3 cases of typhus, but no cases of small-pox, measles, or scarlatina were received. One case of small-pox, 6 cases of measles, 6 of scarlatina, and 8 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 17, being 4 under the number for the preceding week, and, also, 4 below the average for the 39th week of the last ten years. The 17 deaths comprise 6 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 10, the mortality in twenty-eight large English towns, including London (in which the rate was 17·3), was equal to an average annual death-rate of 18·4 per 1,000 persons



living. The average rate for eight principal towns of Scotland was 20·0 per 1,000. In Glasgow the rate was 23·2, and in Edinburgh it was 15·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in five of the districts to 12·9 in Lisburn—the 4 deaths from all causes registered in that district comprising 2 from enteric fever and 1 from diarrhoea. Among the 97 deaths registered in Belfast are 1 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 11 from diarrhoea. Among the 23 deaths in Cork are 2 from whooping-cough and 1 from ill-defined fever. The 5 deaths in Wexford comprise 2 from diarrhoea. The 4 deaths in Sligo comprise 1 from enteric fever and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 140—76 boys and 64 girls; and the registered deaths to 153—91 males and 62 females.

The deaths, which are 1 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·0 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 22·2 per 1,000. During the first forty weeks of the current year the death-rate averaged 24·9, and was 2·5 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty-eight deaths from zymotic diseases were registered, being 2 over the average for the corresponding week of the last ten years, but 1 under the number for the week ended October 3. They comprise 2 from typhus, 4 from whooping-cough, 1 from cerebro-spinal meningitis, 3 from enteric fever, and 16 (including the deaths of 14 children under 5 years of age) from diarrhoea.

Forty-one cases of enteric fever were admitted to hospital, being 19 over the number of admissions for the preceding week. Seventeen enteric fever patients were discharged, 5 died, and 130 remained under treatment on Saturday, being 19 over the number in hospital on Saturday, October 3.

The hospital admissions for the week include, also, 1 case of each of the following diseases—viz., measles, scarlatina, and typhus. Five cases of measles, 3 of scarlatina, and 6 of typhus remained under treatment in hospital on Saturday.

Only 14 deaths from diseases of the respiratory system were registered, being 8 below the average for the corresponding week of the last ten years, and 3 under the number for the week ended October 3. The 14 deaths consist of 9 from bronchitis, 3 from pneumonia or inflammation of the lungs, and 2 from pleurisy.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of September, 1891.*

Mean Height of Barometer,	-	-	-	29·902 inches
Maximal Height of Barometer (on 15th, at 9 p.m.),				30·271 „
Minimal Height of Barometer (on 1st, at 9 a.m.)	-			29·076 „
Mean Dry-bulb Temperature,	-	-	-	56·4°.
Mean Wet-bulb Temperature,	-	-	-	53·8°.
Mean Dew-point Temperature,	-	-	-	51·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·383 inch.
Mean Humidity,	-	-	-	84·3 per cent.
Highest Temperature in Shade (on 10th)	-			75·6°.
Lowest Temperature in Shade (on 7th),	-			44·8°.
Lowest Temperature on Grass (Radiation) (on 7th),				38·7°.
Mean Amount of Cloud,	-	-	-	50·7 per cent.
Rainfall (on 18 days),	-	-	-	2·132 inches.
Greatest Daily Rainfall (on 19th),	-	-	-	·563 inch.
General Directions of Wind,	-	-	-	S.W., W., S.

Remarks.

In the three preceding years, September proved a fine month. In the present year, it was a fine month compared with August; but both at the opening and close the weather was particularly unsettled, showery, and squally. A period of beautiful, summerlike weather accompanied an anticyclone which spread out northwestwards from the Continent over the British Islands in the week ending Saturday, the 12th. This month was remarkable for the frequency of auroral displays, particularly in the far north; for a high mean temperature, and an overwhelming prevalence of southwesterly winds.

In Dublin the arithmetical mean temperature (57·6°) was decidedly above the average (55·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 56·4°. In the twenty-six years ending with 1890, September was coldest in 1886 and in 1882 (M. T. = 53·0°), and warmest in 1865 (M. T. = 61·4°). In 1880, the M. T. was as high as 58·6°; in the year 1879 (the “cold year”), it was 54·3°; in 1887, it was 54·0°; in 1888, it was 54·4°; in 1889, 55·8°, or exactly the average; and in 1890, it was as high as 59·6°. So warm a September as that of 1890 had not occurred for a quarter of a century.

The mean height of the barometer was 29·902 inches, or 0·008 inch below the corrected average value for September—namely, 29·910 inches. The mercury rose to 30·271 inches at 9 p.m. of the 15th, and fell to 29·076 inches at 9 a.m. of the 1st. The observed range of atmo-

spherical pressure was, therefore, 1.195 inches—that is, a little less than one inch and two-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 56.4° , or only 0.8° below the value for August, 1891. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* $\times .476$), the mean temperature was 57.3° , or 1.8° above the average mean temperature for September, calculated in the same way, in the twenty-five years, 1865–89, inclusive (55.5°). The arithmetical mean of the maximal and minimal readings was 57.6° , compared with a twenty-five years' average of 55.8° . On the 10th, the thermometer in the screen rose to 75.6° —wind, S.; on the 7th the temperature fell to 44.8° —wind, W. The minimum on the grass was 38.7° on the 7th.

The rainfall was 2.132 inches, distributed over 18 days—the rainfall was somewhat below and the rainy days were somewhat above the average. The average rainfall for September in the twenty-five years, 1865–89, inclusive, was 2.176 inches, and the average number of rainy days was 14.7. In 1871 the rainfall in September was very large—4.048 inches on, however, only 13 days. On the other hand, in 1865, only .056 inch was measured on but 3 days. In 1888, the rainfall was only .728 inch on 10 days; in 1889, 1.043 inches fell on 13 days; and in 1890, 2.469 inches fell on 14 days.

High winds were noted on as many as 14 days, but attained the force of a gale on only four occasions—the 1st, 21st, 26th, and 30th. A solar halo appeared on the 19th, lunar halos on the nights of the 16th and 18th. Thunder and lightning occurred on the 13th. Auroræ were observed on the 2nd, 9th, and 11th. There was a fog on the 10th.

At 8 a.m. of Tuesday, the 1st, the barometer was down to 28.58 inches at Stornoway in the Hebrides. Strong gales from points between S. and W. blew in most parts of the British Islands, and the accompanying rains were very heavy in many places. After Wednesday, the 2nd, gradients became less steep, so that the wind moderated, but showers continued to fall daily in most districts. On Saturday, the weather again broke up in Ireland. On Wednesday evening faint aurora was seen near Dublin, and the following night aurora was reported from Wick and Aberdeen. In Dublin the barometer ranged between 29.076 inches at 9 a.m. of Tuesday (wind W.S.W., fresh gale), and 30.057 inches at 9 a.m. of Saturday (wind, S.W.). Rain fell daily during the 5 first days to the total amount of .667 inch, of which .244 inch was credited to Tuesday, and .383 inch to Saturday.

The week ended Saturday, the 12th, witnessed a remarkable and gratifying change from storm and rain and cold to calm bright sunshine, and midsummer heat. This most acceptable transformation was brought about by the gradual extension westwards and northwestwards of an anticyclone, or area of high atmospherical pressure, which already at the

beginning of the week was found over France and Germany. Early on Sunday morning and again on Monday night rain fell freely in Dublin, but from Tuesday onwards the weather was very fine. The last three days were summerlike in the extreme—the screened thermometers rising to 75.6° , 73.8° , and 69.8° respectively. Thursday's maximum was the highest reached in Dublin during 1891, and is to be compared with maxima of 73.8° in June, 72.8° in July, and only 69.2 in August. On this same day (Thursday) the thermometer rose to 80° at York, 82° in London, and 83° at Loughborough and Cambridge. The Loughborough maximum on Friday was 86° . The change to fair weather extended westwards only slowly, for rain fell in Munster and Connaught daily up to Thursday—the measurement at Valentia Island, in Kerry, was as much as 2.82 inches. Aurora borealis was seen on the evenings of Wednesday and Friday. On Tuesday and Thursday evenings also displays of it were reported from different parts of northwestern Europe. In Dublin the mean height of the barometer was 29.998 inches, pressure increasing intermittently from 29.767 inches at 9 a.m. of Sunday (wind W.) to 30.122 inches at 9 p.m. of Thursday (wind calm). The corrected mean temperature was 60.2° , or 4.6° above that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 58.5° . The thermometers in the screen rose to 75.6° on Thursday, having fallen to 44.8° on Monday. Rain fell to the amount of .110 inch on Monday night.

Although changeable, and cloudy and squally at times, the weather of the period ended Saturday, the 19th, was on the whole favourable to both health and agriculture. At the beginning a V-shaped depression came in over Ireland from the southwestward, subsequently travelling in a northeasterly direction across this country on Sunday, Great Britain on Monday, and Norway on Tuesday. In front of the "trough" of low pressure the wind was southerly, temperature was high, and rain prevailed accompanied by a good deal of thunder and lightning. In Dublin distant thunder was heard on Sunday afternoon and frequent lightning was seen towards N.W. after dark. The rainfall attending this system was not heavy in Ireland or England, but in Scotland and Norway it was considerable. As the "trough" passed away, the wind shifted to N.W., with a fall of temperature, clearing sky, and bracing air. During the rest of the week, fresh W. and S.W. winds, clouds, and showers were prevalent, an anticyclone over France and Germany causing rather steep gradients for such winds in Ireland and Great Britain. In Dublin the mean height of the barometer was 29.979 inches, pressure ranging from a minimum of 29.717 inches at 9 p.m. of Sunday (wind S.) to a maximum of 30.271 inches at 9 p.m. of Tuesday (wind W.). The corrected mean temperature was 59.1° . The mean dry bulb temperature at 9 a.m. and 9 p.m. was 58.1° . The thermometers in the screen rose to 67.7° on

Sunday and fell to 52.1° on Saturday. The rainfall measured $\cdot762$ inch on three days. Of this quantity, $\cdot187$ inch fell on Sunday, the 13th, and no less than $\cdot563$ inch on Saturday night and the early morning of Sunday, the 20th. Lunar halos were seen on the evenings of Wednesday and Friday, a solar halo on Saturday forenoon. The prevailing wind was westerly.

During the week ended Saturday, the 26th, cyclonic conditions and unsettled weather held over the British Islands, except on Thursday and Friday, when an anticyclone spread northwestwards over England from the Continent. But the beginning and close of the week showed a remarkable contrast as regards the area and distribution of the bad weather. In the interval between the evenings of Saturday, the 19th, and of Tuesday, the 22nd, a serious depression travelled northeastwards across England to the North Sea, which it reached on Monday morning, and then southwards down the East coast of England, finally disappearing over the East of France on Wednesday, the 23rd. This disturbance caused northerly gales and torrents of rain in Scotland (3.6 inches at Aberdeen), Wales, and the West of England, smaller quantities elsewhere, and thunderstorms at many British Stations. As the wind died down and the sky cleared, temperature fell fast at night, so that on Wednesday morning a minimum of 33° was recorded at Nairn, in Scotland. At this time, a new series of depressions began to travel northeastwards across Ireland, where the weather became warmer but unsettled and rainy. This renewal of cyclonic conditions reached its climax on Saturday, when a fresh gale from W.S.W. prevailed, with showers of rain. In Dublin the mean atmospherical pressure was 29.916 inches, the barometer ranging between 30.108 inches at 9 p.m. of Thursday (wind S.W.), and 29.587 inches at 9 a.m. of Saturday (wind W.S.W.). The corrected mean temperature was 54.4° . The mean dry bulb temperature at 9 a.m. and 9 p.m. was 53.4° . The thermometers in the screen rose to 64.9° on Thursday, having fallen to 45.9° on Wednesday. The rainfall was $\cdot513$ inch, of which $\cdot196$ inch was measured on Wednesday and $\cdot188$ inch on Friday. The prevailing winds were—first, northerly; afterwards, south-westerly.

The last four days—27th–30th, inclusive—were characterised by changeable, showery weather, with fresh to strong and squally winds from points between W.N.W. and S.S.W. Rain fell daily, but not in large amount, the measurement being only $\cdot080$ inch.

The rainfall in Dublin during the nine months ending September 30th has amounted to 18.020 inches on 135 days, compared with 10.968 inches on 112 days during the same period in 1887, 17.992 inches on 131 days in 1888, 19.936 inches on 147 days in 1889, 20.855 inches on 151 days in 1890, and a 25 years' average of 19.734 inches on 142.8 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in September, 1891, was 1·957 inches, distributed over 14 days. Of this quantity ·360 inch fell on the 19th, and ·350 inch on the 23rd.

PERISCOPE.

HYDATID OF THE LUNG.

THE place of the hydatid cyst is by all observers admitted to be most frequently in the liver. Davaine and Thomas find the lung the next most abundant; but Fingen finds in Iceland that the lung occupies the third place; and Cobbold that in England it is in the fourth place. Of the 144 cases of hydatid of the lungs that Hearn has collected 82 have been fatal; of the 62 cases of recovery, in 45 the hydatid has been got rid of by expectoration, in 5 by puncture, and in 12 by incision and puncture. M. Ferdinand Marconnet, a medical student in Paris, gives us some interesting particulars of his own case. In September, 1888, aged twenty-two, he began to feel weak and ill, and on October 6-10 he had a slight attack of pleurisy over the upper third of the posterior surface of the right lung. This soon passed off, but on November 20 he suffered from severe pain on the right side, about the level of the shoulder-blade. On November 21 there were signs of sharp pleurisy with effusion over the right side, and a temperature of 102·5°. Next day the pain was worse, the temperature rose to 104·8°, the respirations were as many as 75 per minute, in spite of abundant cupping on the back and a large blister. However, on November 23 the effusion diminished, and the temperature sank to 100·2°. Next day it was normal, and by November 27 he was able to go out for a short time, though rather weak. During the next four months there was frequent dry cough, uncomfortable dyspnœa, and some tendency to weakness and loss of flesh. By March 28, 1889, a painful spot on the right flank began to make itself continually felt, and he had no appetite for more than a pint and a half of milk a day, with two or three eggs. By April 10 he gave up all attempts to carry on his student-life, and went home to Nancy and consulted Dr. Reibel. He was in a state of great prostration, and the physical signs seemed to indicate effusion in the right pleura, which was treated by dry cupping, iodine, and blisters. After ten days there was some hæmoptysis of bright red blood; and after consultation with M. Feltz, all idea of tapping the pleura was given up, and an anti-tuberculous treatment by quinine, creasote, and arsenic was entered upon. M. Feltz did not find any bacilli in the sputa. During the summer, however, there were further symptoms, which were regarded as confirming the diagnosis of tubercle. There were night sweats, with a daily hectic fever rising to

102.5°, slight hæmoptysis on several occasions, and frequent cough with purulent sputa. As to where he should spend the winter, M. Marconnet consulted Professor Jaccoud in September, 1889, as he had been advised by one friend to go to Davos and by another to Algiers. Professor Jaccoud gave it as his opinion that there was no tubercle, and that any visit to these winter resorts was unnecessary. Professor Peter gave almost exactly the same opinion and advice; but Professor Potain was inclined to think there was tuberculosis. The night sweats, at any rate, became more exhausting, and there was no improvement in strength nor appetite, so that in October, 1889, M. Marconnet went to Algiers. It was a rainy winter, and his symptoms grew worse. A careful consideration of the physical signs led to the conclusion that there was an encysted effusion in the pleura, which was treated as before with iodine and blisters; and finally it was resolved to tap the chest. But on December 31, 1889, before this could be carried out, the patient suddenly felt his mouth fill with liquid, which he spat out, and this repeated itself again and again till about a pint had been ejected. There was a little bright blood in the fluid at first, but otherwise it was colourless. After a few minutes, however, a copious hæmoptysis began; and during the next three hours there was a loss of nearly four pints of blood. For four days he was unconscious and in a most dangerous state of exhaustion, with attacks of violent cough and sputa of coagulated blood and pus, which gradually assumed a gangrenous odour. Large quantities of ether were inhaled, on one occasion as much as two pints and a half in twenty-four hours, which overpowered the nausea he felt from the gangrenous smell. The ether kept him in a constant state of intoxication for about a week, and was not completely given up till January 22. On January 13, a fortnight after the first watery expectoration, a piece of membrane was found in the sputa, which gave the clue to the diagnosis of hydatid cyst. This solution of the difficulties of the case was received with great pleasure, and there was revival of appetite. In three months (April, 1890) he seemed quite well, except that there was a little cough with purulent sputa, which have continued up to the present time without further symptoms.—*Le Progrès Médical*, June 27 and July 4, 1891, and *The Practitioner*, September, 1891.

CHLOROFORM MORTALITY.

THE *N. Y. Medical Record* of 30th May devotes an article to the "Mortality from Chloroform Narcosis." As the great case *Ether v. Chloroform* has been decided in opposite ways in Europe and America, fresh statistical information is always welcome, especially as the statistics usually quoted are very loose. Thus the "prevailing belief" (in America) is, that ether gives a mortality of 1 in 25,000; chloroform 1 in 2,500. Dr. Weir, however, examining New York hospitals' figures found an ether

mortality of 1 in 2,000. Prof. Gurlt brought before the German Surgical Congress statistics founded on the experience of 66 hospitals, mostly German. Of 24,675 cases of induced narcosis, 22,656 were due to chloroform, 470 to ether, 1,055 to both combined, 470 to both with alcohol, 27 to bromide of ethyl. "Among the chloroform cases 71 cases of threatened asphyxia and 6 deaths occurred; among the ether cases, none even of danger; among the ether-chloroform cases, 5 of danger; among the ether-chloroform-alcohol cases, 4 of danger; among the bromide of ethyl cases, none." Six deaths in 22,656 cases of chloroform narcosis is 1 in 3,776.

FEMALE MEDICAL EDUCATION IN JOHNS HOPKINS UNIVERSITY.

MISS MARY GARRETT has offered an additional sum of £2,000 to the Trustees of the University towards the endowment and establishment of the Medical College for Women, on condition that (1) the trustees will raise the sum still necessary to make up the £100,000, the fixed minimum required; and (2) that the school shall be opened in October, 1892. The ladies of Baltimore and elsewhere raised and paid over on the 1st May, £22,200. From other sources this has been increased to £35,756; so that to satisfy Miss Garrett's conditions the trustees have to raise £64,244. This they have undertaken to do. Boston contributed £4,046 to the Ladies Committee, and Philadelphia £1,615.

FIVE YEARS' COURSE IN CANADA.

THE College of Physicians and Surgeons in Ontario will require for its medical qualifications, from July, 1892, five years' professional study, to include four six-month winter sessions, and one ten-week summer session. The fifth year is to be devoted to clinical work, and half of it may be spent with a registered practitioner in Ontario; the other six months "at one or more public hospitals, dispensaries or laboratories, Canadian, British, or foreign."

LAURA BRIDGMAN'S BRAIN.

It is scarcely necessary to mention that Laura Bridgman, who died in 1889 at the age of 60, lost sight and hearing when two years old, had some sense of taste, but practically none of smell; and was endowed, in compensation as it were, with abnormally acute tactile sensibility. Mentally she was eccentric rather than defective; she was emotional, with a tendency to hysteria. Dr. Donaldson, of Clark University, published in the *American Journal of Physiology* (Sept., 1890) a report upon her brain. It weighed 1,200 grams, considerably below the average for Anglo-Saxon and German brains—1,275 grams—but her body-weight and stature were considerably below the average. "There was some defect"—we quote from the *N. Y. Medical Record*—"in the centres for

articulate language, especially the right (visual centre), and in the temporal lobes, especially the tips. This last condition may have been due to her imperfect sense of smell and taste. The fissure of Sylvius was short, and the posterior corpora quadragemina small. There was nothing in the appearance of the brain which would ally it to low-type, criminal, and insane brains." Microscopical examination had not yet been made.

MEDICAL FACULTY OF M'GILL UNIVERSITY.

At the fifty-eighth Annual Convocation of the M'Gill University (held April 1st, 1891), the Dean stated that the total of students in the Medical Faculty had been 261 during the previous Session—104 from Ontario, the remainder came from Quebec (83), New Brunswick (29), Nova Scotia (16), Prince Edward Island (14), United States (7), Manitoba (4), Newfoundland (1), British Columbia (1), and West Indies (2).

MEDICAL EDUCATION IN PENNSYLVANIA.

At a meeting of the Board of Trustees of the University of Pennsylvania held May 21, Dr. Pepper made an offer of 50,000 dols. towards an endowment fund of 250,000 dols. and of 1,000 dols. annually towards a guarantee fund of 20,000 dols. annually, for five years, conditioned upon the establishment of an obligatory graded four-year course of medical study. This was accompanied by a communication from the Medical Faculty pledging themselves to carry out this proposal and to enter upon the four-year course in September, 1893. It was also reported that the members of the Medical Faculty had themselves subscribed 10,000 dols. annually for five years to the endowment fund. The Board of Trustees expressed approval of the proposed advance in medical education, but postponed their assent until the success of both funds had been demonstrated.—*Journal American Med. Assoc.*

CANTHARIDINATE OF POTASSIUM.

In *Lo Sperimentale* (Florence) of May 15th, Dr. Ernesto Germonig, principal medical officer of the Civil Hospital, Trieste, reports ten cases treated by him with Liebreich's injections of cantharidinate of potassium. Eight were suffering from pulmonary and laryngeal tuberculosis, one from lupus and pulmonary tuberculosis, one from chronic hypertrophic laryngitis. His conclusions are that the drug is harmless if not contraindicated by the state of the urine, and if the dose does not exceed two decimilligrams; that a dose of one decimilligram is not followed by albuminuria or other disturbance of the urinary organs, but that such results (passing away after a day or two) followed this dose when doubled next day; that this dose, once repeated, is sufficient; that after such two injections on successive days, one day's interval should be allowed; that the drug so used, in cases of simple inflammation and tuberculous infil-

tration of the larynx, a serous exudation was soon re-absorbed, with diminution of the infiltration, and improvement in voice and deglutition; that tuberculous ulcerations show a tendency to heal; that no other remedy effects so rapid a diminution of tuberculous infiltrations of the larynx; that it is desirable to combine with the treatment local applications of lactic acid, to help forward the cicatrization of ulcers; that the drug has no effect on the pulmonary disease, nor on the specific bacilli; and that it is contra-indicated by albuminuria.

MEDICAL EDUCATION IN AMERICA.

THE Illinois State Board of Health publishes annually a most valuable report on medical education in the United States and Canada. From the issue for this year we can estimate the rapid improvement which is going on in American medical schools. In 1868 no school demanded more than two years' professional study. In 1891, 90 of the 111 existing medical schools—81 per cent.—require more than two years, 34 require, or will soon require, four years' study and three courses of lectures, 4 require four courses. In Canada there are 13 medical schools, most of which require attendance for four winter sessions, and it has hoped that so much will soon be compulsory in all Canadian schools.

VITAL STATISTICS OF HEBREWS IN THE UNITED STATES.

WE are indebted to the *N. Y. Medical Record* for an abstract of a report issued by the Census Office on the sanitary statistics of Jews in the United States. The general inference is that their birth-rate is diminishing and their death-rate increasing. Males exceed females in the ratio of 109.53 to 100.00, the proportion in the population generally being 103.57 to 100.00. The marriage-rate is only 7.4 per mille per annum, while that of the general population of the North-eastern States ranges from 18 to 22. The average age at marriage is higher among the Jews. The average number of children to each mother is 4.66, being only 3.56 for mothers born in the United States; for Germans, 5.24; for Russians and Poles, 5.63; for Hungarians, 5.27; and for Bohemians, 5.44. The number of Jewish children under five is less than the average (excluding negroes), as 9 to 13; but from 5 to 15 years it is greater, as 29 to 23. The death-rate is very low—7.11 per 1,000—"a little more than one-half the annual death-rate among other persons of the same social class and conditions of life;" but it is rising rapidly. Mortality from tubercular diseases—phthisis, scrofula, tabes, and hydrocephalus—is below the general rate. Female mortality is higher than male, as 7.16 to 6.47: the excess occurring after 15 years of age; for, under 15, the male death-rate is 10.64; female, 9.15. The mortality among males is greater in sons of American-born mothers, least in offspring of Russians and Poles. Comparing death-rates of male Jewish population, between ages of 15

and 45, it is found that the average is 3·10; for sons of American-born mothers, 1·98; of German mothers, 2·86; of Russians and Poles, 1·59; of mothers born in England and Wales, 6·32. The death-rate of American children of American parents was 9·15; of foreign-born, 7·61. Between 15 and 45 years, single mortality is decidedly greater among males than married. For females between 25 and 35, the single death-rate is 2·48, the married 4·55. Over 35, the female death-rate is higher among the single.

CINCINNATI HOSPITAL.

THE thirtieth Annual Report of the Cincinnati Hospital (for 1890) informs us that 3,918 in-patients were treated during the year, with a mortality of 7·5 per cent., distributed thus: medical, 12·29; surgical, 2·97; children's, 10·81; obstetrical, 0·30 (or 0·40?); gynæcological, 2·20. Ninety-four cases of pneumonia were treated, with 40 deaths—43 per cent.; or, if 22 cases, admitted with "incurable complications," be excluded, 25 per cent. If cancer cases be excluded from the gynæcological mortality, the death-rate was only 1·5. There were 214 deliveries. One hundred and six cases of enteric fever showed a mortality of 11·30.

BOSTON CITY HOSPITAL.

FROM the twenty-seventh Report of the City Hospital, Boston (for 1890), we learn that the total revenue of the hospital was £5,884, of which the State of Massachusetts contributed £1,689; other cities and towns, £1,108, and patients £3,087. Pay-patients are ordinarily charged 7 dollars a week, which is less than the average cost; but some pay 15, 20, or 25 dollars, according to accommodation. Of 6,274 patients admitted during the year, Boston supplied 1,343, the British Provinces 751, Ireland 1,848, England 298; 752 deaths occurred, giving a mortality of 0·11 per cent.; 0·054 per cent. died within 48 hours of admission, and 0·022 per cent. were due to diphtheria alone.

PASTEUR AND HYDROPHOBIA.

THE *Journal of the American Medical Association*, Sept. 1, 1891, devotes an article to Dr. Roux' paper, read at the recent Congress of Hygiene and Demography, from which we take the latest statistics of M. Pasteur's treatment of hydrophobia. In the five years 1886–90, 7,925 cases were treated in the Pasteur Institute, falling into classes (A): bitten by animals demonstrated by experiment to have been rabid; and (B) bitten by animals stated to be rabid by veterinary surgeons. The mortality was 0·92 per cent.; that of persons "bitten by animals actually or presumably rabid" being 12 to 14 per cent. under ordinary treatment, or none. The ordinary mortality following bites about the head is 80 per cent. Of 710 such cases treated in the Institute 24 died, a death-rate of 3·38.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XX.—*Pathology, and its Teaching in Dublin.*^a By C. J. NIXON, M.D.; Professor of Medicine, Catholic University; Senior Physician, Mater Misericordiæ Hospital; President of the Section of Pathology of the Royal Academy of Medicine in Ireland.

MY first duty is to thank you most heartily for the high honour which you have conferred upon me in electing me President of this, certainly not the least important, Section of the Academy of Medicine. It is a position dignified by historic associations, remote and proximate; and if I can but imitate, *longo intervallo*, the traditions which have been handed down by a succession of earnest and distinguished workers, I shall be content.

There is no pleasure unalloyed, no honour or distinction which has not its counterpart. When I learned that the holding of the office of President involved the giving (at four or five days' notice) of an Address, I confess that I would gladly have escaped so grave a responsibility, and I appealed to our worthy and distinguished Secretary that I might be spared inflicting upon you such crude and trite comments which, in a limited time, encroached upon by other and anxious concerns, were not likely to be worthy of the society or creditable to myself. But I was informed that the rule requiring the President to give an opening Address was as immu-

^a Address delivered before the Section of Pathology of the Royal Academy of Medicine in Ireland, Friday, November 6, 1891.

table as the laws of the Medes and Persians, and the tone in which this enforced observance was conveyed was so emphatic, that I fully realised whatever hope there might have been of a new departure in the case of an ancient and historic people, there was none in the procedure of the Pathological Section of the Academy. There was, however, one privilege granted to me, that any communication I desired to make might be as short as would be becoming in addressing so learned an audience as that represented by the Academy of Medicine—a privilege which it is my intention to avail myself of.

In the short time that I shall intervene between you and the work of the meeting I propose using the opportunity which has been afforded me, unexpectedly and, I fully realise, undeservedly, to review briefly the position which the subject of Pathology now holds in scientific and practical medicine, and the means at our disposal, here in Dublin, of teaching the subject to students.

The progress of pathology during the present century may be classified under three almost equal periods. In the first, the great impetus which was given to the teaching of topographical anatomy led to a careful study of morbid macroscopic anatomy and to the relation of the changes observed to signs of disease existing during life—in other words, to clinical medicine.

In the second period the relation between pathology and clinical medicine was more fully established, whilst the careful investigations made as to the histology of the tissues and organs—a result largely aided by the improvements effected in the construction of microscopes—and the more defined knowledge which was acquired regarding the functions of these structures, helped to make the study of morbid anatomy the key to unlock the mystery of the processes of disease.

The third period dates from the discovery of Schleiden on the cellular structure of the vegetable tissues, followed soon afterwards by the recognition by Schwann of the cell as the vital unit of all organised structures, a doctrine elaborated and strengthened by the researches of Goodsir. Then came, in 1858, the epoch-making work of Virchow, the counterpart of the cell theory in normal pathology—dedicated to Goodsir “as one of the earliest and most acute observers of cell-life, both physiological and pathological”—giving to pathology that impetus by which it reached, almost in bounds, the high position which it holds in medicine at the present day, a position potential not alone in the light which it throws

upon the ætiology of diseased processes, but also in its forming the basis of a rational system of therapeutics.

It will not be forgotten that the present status of pathology is due, not so much to the study of morbid anatomy in its relation to clinical medicine, as to the advances which have been made in physiology and the opportunity which these advances afforded for their application to the study of pathological cell-life. So close is the connection between physiology and pathology that, in Professor Foster's words, the two may be regarded as identical. For what does physiology teach us?—not merely that the living body “represents a group of machines called organs, each doing a work called its function, the several machines being bound together in a more or less orderly manner into a bundle called the individual;” this forms but the outer crust of the science itself. The key that will unlock the mysteries of life is an understanding of the broader laws of that “conflict of atoms which is going on in every tissue; the perpetual building up and breaking down; that molecular strife which appears—now as the piling up of material in growth, now as the result of a secretion, or the shock of a muscular spasm, or the thrill of a nervous impulse.” Take the instance Professor Foster gives of the secretion of the gastric juice. To secrete this is the function of the stomach, of the gastric glands. But, as we probe deeply, we find that we have touched but the fringe of the inquiry. We have to investigate into “the nature of those changes in the protoplasmic network of the cell, whereby, amidst the coming and going of granules, the shrinking and swelling of the cell, the crumpling and unfolding of the nucleus, water containing salts, and the mysterious pepsine, trickles into the lumen of the gland.” It is here, obviously, that the study of physiology and pathology meet: the distinction which is drawn between them is merely an artificial one, useful in the limitation of different fields of labour, but one subject representing merely an extension of the same study and subject-matter, and both prosecuted by like methods of investigation. A morbid change of structure, however refined and elaborate may be the means of its investigation, is not in itself the disease; it is the result of the disease, the origin of which must be traced to those dynamic conditions which set up the structural alteration by disturbances as subtle as those which lead to the normal processes of secretion.

The connection or rather the identity which has been established between physiology and pathology affords grounds for satisfaction

at the progress which has been made in physiology during the past decade. Students are required to attend a course of practical histology as well as, in most instances, two courses of lectures on physiology; whilst, in some of the Universities, the course on practical histology is made to include instruction on experimental or practical physiology. This is as it should be. When we consider how limited is the opportunity for most medical men to obtain even a fair knowledge of physiology, and how intimately such knowledge is bound up with our conception of health and disease, I do not think in any way, I exaggerate the importance of this branch of medical education by placing it first in the list of all the subjects of the curriculum. Anatomy, it is true, *claims* the first place, not so much for its practical utility as that it is a discipline of the mind.^a But, if we bear in mind that physiology comprehends the study of physics, chemistry, and biology, it is difficult not to concede to it at least as high a disciplinary effect as the study of topographical anatomy; whilst few will be found to contend that the practical utility of anatomy is comparable to that of physiology. It is due to this careful development of the study of physiology that pathology has been raised from being merely a branch of natural history, what it was in the time of Hippocrates, to the rank of an inductive science, strengthened as it has been by those researches in elemental pathology carried out in reference to plants by Sir James Paget, and to animals by Pasteur, Bland Sutton, and others.

In its relation to clinical medicine pathology may be said to have awakened the keenest sympathy of the physician. I have heard of one of our hospital teachers who sets his face against post-mortem examinations. He dislikes them, he said, because they always upset his diagnosis. Well I do not think there is a hospital teacher who has any interest in his profession who will be found to controvert this statement:—Take away the opportunity of accounting for the signs of disease existing during life, leaving to the physician merely the work of recording the life-history of his patients, let him be only a machine for the administration of drugs, and the interest of professional life may be said to vanish, medicine becomes a mere trade, and those who practise it but little removed from

^a It is freely conceded that the great attention which has been paid to anatomy in the work of organisation, as well as teaching, has largely contributed to the success of our medical schools; whilst the high scientific character of the work done by our great teachers of the subject has materially helped to raise the status of the institutions with which they are connected.

charlatans. We are at once brought back to the time "when the anger of a god was a sufficient reason for the existence of a malady, and a dream ample warranty for therapeutical measures."

But let us realise fully what is meant by clinical medicine. It is the method of ascertaining by the life-history of the individual the dynamic condition which constitutes disease—that condition which may or may not be associated with change of structure, but which is the antecedent of the changes that represent the processes producing them. It is in the explanation of these processes that pathology steps in to clear up the difficulties which we meet with in our analysis of signs and symptoms.

Take, for example, a case of locomotor ataxy. We ascertain that a certain disorder of muscular movement exists, associated with disturbance of sensibility. This condition may be accompanied by trophic changes, affections of the nerves of special sense, disturbance in the various reflexes, occipital headache, cerebral vomiting, &c. The motor disturbance may be the same in all varieties of the disease, so that it would be difficult to conceive how any idea of localisation or of derangement of function could be formed without reference to pathology. It is pathology that teaches us that the lesion is one of the muscle sense-nerves, that these may be implicated either in the peripheral nerves, in their course through the posterior white columns of the cord, or at their termination in the cerebellum. Nay, more, it leads us to believe that incoordination of movement may be explained by a lesion of that small comma-shaped tract of short fibres in the dorsal region, which, in disease, undergoes a descending degeneration, and the function of which appears to be that of connecting the posterior grey matter of the cord at different levels. In locomotor ataxy pathology not alone explains the phenomenon of incoordination, but it helps us to understand these differences in the clinical symptoms which attend peripheral, spinal, and cerebellar lesions.

We have it claimed for clinical medicine that it is the mother and the mistress of the Medical Arts, but, stripped of its connection with pathology, clinical medicine would have to at once relinquish all pretensions to be regarded as a science. It would represent simply a huge muster of life-histories, a collection of guesses, skilful or otherwise, incapable of making progress, and subject to as many fallacies as a new religion preached by a crazy enthusiast. I am far from being disposed to under-estimate the great advance that has been made by accurate and careful clinical observation, but I merely contend

that without the light which is shed upon the processes of disease by physiology and pathology, the domain of medicine would be like a barren waste interspersed with isolated spots of luxuriant vegetation, but presenting on the whole the dreary aspect of a desert.

We may then estimate the relation of pathology to medicine under two heads, or as having two ultimate ends. One, as completely scientific in character as biology of which it is a branch; the second, where it becomes subservient to the practical ends of medicine, viz., the treatment of disease.

Regarding the first aim, Professor Huxley says:—"Living matter is characterised by its innate tendency to exhibit a definite series of the morphological and physiological phenomena which constitute organisation and life. Given a certain range of condition, and these phenomena remain the same, within narrow limits for each kind of thing. They furnish the normal and typical character of the species, and, as such, they are the subject-matter of ordinary biology. Outside the range of these conditions, the normal course of the cycle of vital phenomena is disturbed, abnormal structure makes its appearance, or the proper character and mutual adjustment of the functions cease to be preserved. The extent and the importance of these deviations from typical life may vary indefinitely. They may have no notable influence on the general well-being of the economy, or they may favour it. On the other hand, they may be of such a nature as to impede the activities of the organism, or even involve its destruction. In the first case, these perturbations are ranged under the wide and somewhat vague category of 'variations;' in the second they are called 'lesions,' states of 'poisoning' or 'diseases,' and, as morbid states, they lie within the province of pathology. No sharp line of demarcation can be drawn between the two classes of phenomena. No one can say, for example, where anatomical variations end and tumours begin, or where modification of function, which may at first promote health, passes into disease. All that can be said is, that whatever change of structure or function is hurtful belongs to pathology. Hence it is obvious that pathology is a branch of biology; it is the morphology, the physiology, the distribution, the ætiology of abnormal life. Henceforward the connection of pathology with the biological sciences is clearly defined, and pure pathology is that branch of biology which defines the particular disturbances of cell-life, or of the co-ordinating machinery, or of

both, on which the phenomena of disease depend." This clearly defines the strictly scientific position of pathology.

The second or practical aim of pathology by which it becomes subservient to the practical ends of medicine, is of paramount importance, inasmuch as it forms the basis for a rational system of therapeutics.

Surely this is a "consummation devoutly to be wished." Am I not justified in saying that the therapeutics of disease constitute the opprobrium of medicine? I am far from desiring to underestimate the value of experience in treatment, but how is the empirical method practised? By empirical laws in their logical interpretation, I understand uniformities which observation or experiment have shown to exist, but on which one hesitates to rely in cases varying much from those in which they have been actually observed, for want of seeing any reason *why* such a law should exist. But for the most part, the present view of the treatment of disease by the empirical method is not one based upon *uniformities*, but often on the experience derived from solitary instances of disease—in most cases the outcome of a confusion between cause and effect, and without the faintest trace of any intermediate link between the antecedent and the consequent. The fault seems to lie in medical men slavishly accepting the popular notion of disease—a point referred to by Professor Purser in his Address at the opening of the Physiological Institute of Trinity College, Dublin—which is to regard it as an entity apart from the individual, and for which there exists a specific. It may indeed be urged that in the majority of cases where drugs are administered, we are but carrying out the treatment of disease by "suggestion"—a method sufficiently appropriate for the *malades imaginaires*, though it is humiliating to be made the agents of those pertinacious individuals who call upon you to display their Pandora-like boxes of pills, pastilles, meat-extracts, and suppositories—triumphs, no doubt, of artistic pharmacy—to make us realise that one may "die of a rose in aromatic pain."

The evil of the present system of therapeutics is the tendency which it engenders to pass from the laboured and thorny paths of strict scientific accuracy to "the primrose path of dalliance," where, without any mental effort we can quote authority, like Scripture, for any end we may pretend to accomplish. Turning over one of our modern aids to therapeutics, I may adduce two diseases which are said to be cured by various drugs—chorea and Bright's disease. In the

former the following *résumé* of remedies for the disease is given:—Camphor, sulphate, valerianate and bromide of zinc, ammoniate of copper, extract of cimicifuga, various preparations of arsenic, iodide of potassium, strychnin, sulphuret of potassium, valerian, hyoscyamus, sulphate of aniline, various salts of iron, tartar emetic, opium, chloroform inhalations, gymnastics, and hydrotherapy. In this *embarras des richesses* the difficulty lies in selecting one out of so many *remedies*, in the treatment of a disease which a high authority—one with which my own experience fully accords—gets well under the influences of mental and physical rest, an appropriate dietary, and time.

In Bright's disease the *résumé* includes—amongst other drugs—Tartar emetic, water in large quantities, arsenic, belladonna, cantharides, digitalis, iodide and other properties of iron, potassii bitartras, potassii sulphas, potassium sulphite, scoparius, tannic and gallic acids, Dover's powder, the ubiquitous iodide of potassium, muriate of ammonia, guaiacum, and, though last not least, the perchloride of mercury. I presume each special drug has its followers, so that the broad line of empiricism, which the modern art of therapeutics so thoroughly embraces, split up as it is into so many sects of credulous votaries, cannot be said to present the front of a harmonious whole. Is it not this absence of any intelligible scientific basis for the treatment of disease, which brings such discredit upon medicine—affording a pretext for the cynical description of our art given some time since by one of her Majesty's judges—viz., that it consisted in putting drugs of which we know little into bodies of which we know less?

Happily, the prospect in regard to the treatment of disease is not as discouraging as one might infer from its present position.

Pathology, especially experimental pathology, has influenced materially, and will influence still more in the future, our views regarding treatment. This is especially the case in reference to surgery, where the observations and experimental researches of Hughlings Jackson, Hitzig, Ferrier, Victor Horsley, and others, have led to the most important results in affections of the brain and spinal cord—methods of treatment promptly availed of, and with conspicuous success, by some of the members of our Academy of Medicine.

If Professor Koch did not realise the hope which he entertained as to the curative power which his re-agent exercised in tuber-

culosis, he, at all events, deserves the credit of demonstrating the power of selective affinity which this re-agent has for a special tissue, the nature of which it materially modifies. Few who have followed the progress of Koch's work, will refuse to admit that his experiments give grounds for the hope that pathological research will in the future afford the most intelligible basis for the administration of drugs.

Time does not permit of my dwelling upon the relation of pathology to Preventive Medicine, or upon that branch of it which is destined to play so important a part in the future of medicine—namely, Bacteriology. It is only necessary in this connection to mention the names of Davaine, Pollender, De Barry, Koch, Flügge, Klein and Gibbes, Friedländer, Pasteur, Watson Cheyne, Klebs, Crookshank, Cohen and Zopf, Burdon Saunderson, and Woodhead. To Lister, I need hardly remind the Section, we owe, from his physiological researches, the application of the germ theory in explanation of the phenomena of putrefaction. To what extent the theory of Biogenesis has spread may be realised by the facts which have accumulated with regard to the nature of the different infective fevers, diphtheria, anthrax, tetanus, erysipelas, actinomycosis, certain forms of gangrene, &c.

Having now pointed out the position which pathology holds in medicine, let me for a moment direct attention to its educational position. It is only within the past two or three years that the importance of the subject received such recognition as to require from students a certificate of a three months' course of attendance at instruction in it, and in the medical schools lecturers have been appointed to deal with the subject. But it is, I think, apparent that the means at the disposal of teachers is miserably inadequate, and we are driven to admit that, as regards the teaching of pathology, the Dublin School of Medicine is lagging in the race. We can account for this in many ways. The change effected by the establishment of the Academy of Medicine influenced, no doubt materially, the teaching of pathology. In the Pathological Society, notwithstanding its deficiencies, the student had at its weekly meetings a considerable field of observation in reference to macroscopic morbid anatomy, an opportunity not afforded by attendance at any single hospital, or by attendance at this Section. We, I take it, represent a society of research, and as such any attempt to turn our meetings into demonstrations of an elementary character would be, very properly, resented by the members. The

work done here is of a different order from that of the older Society, excellent in many respects as was its character. If I were to venture a criticism, I would say that the work of the new Society shows a greater amount of care in its preparation, a more rigid fidelity in the record of facts, a more reasonable and restrictive enunciation of speculative theories, a more marked toleration of differences of opinion, and a healthy repression of inferior or trite communications. There seems to have been engendered a certain coldness and austerity of tone in our proceedings which affords a contrast to the brisk and almost business-like air of those of the older Society.

But in the change that has been effected have our students sustained any loss? Is there truth in this statement, that pathology is taught more as morbid histology than in reference to macroscopic anatomy, that our students become experts more in cutting and staining than in familiarising themselves with the naked-eye appearances of disease, and further, that no opportunity whatever is afforded for the study of experimental pathology.

Added to this state of things we have the difficulty of paucity of material to contend with. The multiplication of hospitals in Dublin, and the comparatively few beds maintained in each, necessarily limit the opportunities of making *post-mortem* examinations, whilst the instinctive objection of our countrymen to permit of *post-mortem* examinations still further restricts investigation. We may sum up the position by saying that we are abundantly supplied with observations during life, restricted in a marked degree in reference to observations after death, whilst there is practically no opportunity afforded for experimental pathology. Is there any way out of these difficulties?

Gentlemen, I wish I possessed a position of weight and influence such as some of my predecessors exercised upon the profession. I wish most earnestly that I could express in forcible, if not eloquent, words, *ardentia verba*, the importance of the proposition which I put before you to-night. I am but one amongst many who recognise the deficiency, the utter inferiority, of the Dublin School of Medicine, in one respect, and I think I may say in one respect only, the want of a thorough method in the teaching of pathology, and it is more than expedient that something were done to place this matter upon a different and a satisfactory footing.

The proposal I venture to offer for your consideration is this—

that we should make the fullest use of all the means at our disposal for the teaching of pathology by establishing in Dublin a Pathological Institute. It would be impracticable, as it would be undesirable, to have such an Institute in connection with each of our three schools; but by establishing one independent Institute our resources would be concentrated, and our supply of material for investigation and demonstration rendered adequate. To put the idea into shape, I would suggest that such an Institute should have no connection with a medical school, and that it should have either an independent existence, in a suitable building provided for the purpose, or that a neutral, non-teaching body, like the College of Physicians, should undertake to give facilities as regards the providing of lecture rooms and laboratories, at all events in the start. If it could be accomplished, a special building for the Institute should be erected, and in the Institute the pathological teaching for all our students should be conducted. It would be premature to discuss details of management, &c.; but I may point out how the scheme could work. The Institute should be officered by a director and two assistants, who would be required to devote themselves exclusively to their special work. It should consist of three departments dealing with—(1) Pathology, (2) Bacteriology, and (3) Chemistry.

Pathology.—The assistant officers should be connected as pathologists with the various hospitals, and, in general, all *post-mortem* examinations in these institutions should be made by them. They should perform all autopsies in medico-legal cases, in workhouse infirmaries, public asylums, &c. A supply of material adequate for the purpose of teaching would in this way be provided. All systematic pathological teaching, macroscopic, microscopic, and experimental, should be carried on in the institute, and no certificates of instruction in pathology should be accepted by the licensing bodies except those issued from it.

Bacteriology.—There should be the fullest opportunity afforded for the study of bacteriology in its relation to processes of disease occurring in man, animals, and plants. In connection with this department *post-mortem* examinations would be made upon animals suspected to have died of poisoning or from infective disease, the examinations being made with collaboration of the Chemical Department.

Chemistry.—This department would deal chiefly with organic

chemistry, making analysis of the various secretions, examining for ptomaines in various varieties of food, &c. It might also undertake part of the work done by the Public Analyst in the examinations of the various adulterations met with in food-stuffs and medicines.

In connection with the Institute there should be the fullest opportunity given for the treatment of diseases of which hydrophobia is the type, as well as for the thorough investigation of the mode of prevention and methods of cure of infective diseases in men and animals. It should provide the place where research might be carried on for these purposes.

The proposition which I venture to bring under your notice is, no doubt, revolutionary, and to some it may appear impracticable and Utopian.

Where, one asks at once, are the funds to carry out such a proposal as the establishment of a Pathological Institute in Dublin? I answer at once that the funds should come from the State; and I am sufficiently sanguine to hope that an appeal made by the Universities, by the Royal Colleges of Physicians and Surgeons, and by the Medical Schools, would so impress the Government with the utility of establishing such an Institute as I suggest that a sufficient grant would be forthcoming for the purpose.

It is not difficult to show how little the State has done for the promotion of science in Great Britain at large, but especially in this country, forgetting that its main duty is to promote health and prosperity, and to diminish to the fullest extent all the preventable ills "that flesh is heir to."

Some years ago, Sir Lyon Playfair, in an address to the British Association, directed attention to the neglect of science, in the matter of endowment, by the Government; and he mentioned some interesting facts which show the marked contrast between the fostering care exercised by other European States in reference to science and the Universities, and to science and industry, and the neglect of both at home—a neglect which explains our slow progress in both technical and scientific knowledge. A comparatively short time since the University of Strasburg was rebuilt at a cost to the State of £711,000, besides receiving an annual subscription of £43,000; the cost of 8 new laboratories being as follows:—Chemical Institute, £35,000; Physical Institute, £28,000; Botanical Institute, £13,000; Observatory, £25,000;

Anatomy, £42,000 ; Surgery, £26,000 ; Physiological Chemistry, £16,000 ; Physiological Institute, £13,900. France, though crippled after the disastrous campaign of 1870, rebuilt her provincial colleges at a cost of £3,280,000, whilst the annual budget for their support reached half a million of pounds. A small State like Holland spends £160,000 in the promotion of scientific and university education. Zurich, by her grade schools and her splendid technical college, has become a prosperous manufacturing city. A few years ago I had an opportunity of visiting the new University of Budapest, and inspected, with surprise and admiration, the departments devoted to medical education. Splendid lecture halls ; physical, chemical, physiological, and pathological laboratories, all complete in every detail, and models of artistic structures and arrangement. The University was built by the State at a cost of £2,000,000 sterling. Foreign States fully recognise that the competition of the world is a competition of intellect ; hence they consider money well spent and remunerative which promotes social progress and scientific culture.

“ Were half the powers that fill the world with terror,
Were half the wealth bestowed on camps and courts,
Given to redeem the human mind from error,
There were no need of arsenals and forts.”

Unfortunately the British Treasury is disposed to think there is a finality in science as well as in other branches of progressive knowledge. But even independently of State aid, a moderately large income would be derived from students' fees as well as from the specialist work done in the different departments, as in the examination of tumours, sputum, urine, food, and medicine ; making autopsies on animals, and conducting medico-legal investigations. We might, too, reasonably expect that our two universities would extend aid, direct or indirect, to a concerted effort made to give us the means of putting the all-important subject of pathology on a level with the position it holds in the great Continental schools of medicine.

I am one of those who hold that it is sound and pure patriotism to endeavour to promote the progress of that concern which forms the business of one's life, whether it be arts, science, or industry. Our concern is with medicine. We have here in Dublin many of the elements which should combine to render our School of Medicine as attractive at least as those great schools in Scotland

which serve to indicate the progress of the sister country. Why should we not make a great effort to put our School on a level with those of France and Germany? Why should we tacitly admit that our position in the future must be necessarily one of inferiority? Will we make no effort to keep our students at home and attract strangers to our hospitals and schools? Shall our motto be—"Carpe diem, quam minime credula postero"? We have advantages, surely, which should be fully availed of—two Universities in our midst; but three medical schools, sufficient to promote a healthy rivalry; unrivalled opportunities for clinical teaching; but one glaring deficiency—that to which I have called attention. Will not a combined effort be made to remove any shackles that would be likely to bar our progress?

I am not vain enough to believe that the scheme which I have ventured to outline in reference to the future of pathological teaching in Dublin will be carried out as I have indicated; but if I succeed in arresting the attention of those who are alive to the interest of medical education at home, and that something, no matter in what direction, is done towards placing pathology on the footing which it should hold as a branch of scientific teaching, I will, indeed, have reason to be proud of the honourable position which you have conferred upon me in electing me President of the Pathological Section of the Royal Academy of Medicine.

ART. XXI.—*Hot Water Flushing applied to General Surgery.*^a

By ROBERT O'CALLAGHAN, F.R.C.S.I.; Surgeon, Carlow Co. Infirmary.

IT is now five years since I stated in a paper on "Abdominal Section," read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, that in my experience true anti-septic surgery meant absolute cleanliness, and tried to show then that the result of my abdominal work up to that time demonstrated that this was easily obtained by flushing with large quantities of hot water from the tap at a given temperature. This important addition to surgery is one of the many that the surgeon has learnt from the modern gynecological school, the pioneer of which taught me its value. I found I could get better results by this

^a Read in the Surgical Section of the British Medical Association at Bournemouth, July 29, 1891.

simple treatment than by the elaborate preparations and detail which I formerly practised with assiduity, and had been taught was positively essential for asepsis; which, although carried out under the most careful supervision, was far from satisfactory—suppuration and even septicæmia occurring in the work of many of our brilliant surgeons. The defects of this Listerian method were never so apparent as when watching the work of a well-known operator, who religiously adhered to and was surrounded by all the paraphernalia of Listerism. The spray was wetting him and his assistants thoroughly, chilling the patient; his carbolised instruments were handled by anyone, laid down anywhere but in the appointed tray; sponges accidentally dropped on the floor were picked up covered with a million streptococci and washed with the others. This is not imagination; but even in this year of our Lord, despite the most carefully laid down rules, it happens every day in many an operating theatre.

No one knows how hard it is, except those who have tried, to get medical men and nurses—mark, I speak of the better class and well trained—to grasp the meaning and importance of surgical cleanliness. Some, when they have washed their hands as if going to dinner, rinsed them in carbolic or sublimate, mopped the wound and its area with a sterilised lotion, and have all the other details of this elaborate method, think that all is perfectly safe inside this elaborate cordon. Should there be failure in asepsis after all this observance of detail, the lotion, ligature, or dressing is blamed, but the real secret of failure is overlooked. Too much faith has been placed in this chain of antiseptic agents; a link has been dropped by some carelessness of detail on the part of the operator, assistant, or nurses—this link being absolute cleanliness, which in itself is the basis of the whole fabric called Listerism, which, when carried out in a thoroughly trained clinic, is very pretty and imposing and generally successful, but which I maintain is quite unnecessary if cleanliness alone is observed.

Having experienced all this, and been through the maze of antiseptic surgery, carrying out every detail as precisely as was possible (in accordance with the rules laid down with so much fullness and clearness in that excellent work of Mr. Watson Cheyne on “Antiseptic Treatment of Wounds”), with so many disappointing results, I abandoned it five years ago in favour of absolute cleanliness, which I found was the basis of antiseptic work, and

was brought about by hot water flushings before, during, and after operation. The details of this treatment are easily followed. I have supplied myself with two glass jars capable of holding four gallons, and to each of which is attached ten feet of rubber tubing with nozzle and stopcock. These are on automatic telescopic stands, and filled with hot water at a temperature of 118°, or as hot as the hand can bear; colder than this is useless. Begin by douching your wound area, or wound if there is already one, using a sponge or brush in conjunction with this. During operation your assistant removes blood, pus, or any *débris* with this jet of water. After tying vessels, douche until all capillary oozing ceases; and having stitched up your wound, now use the water as hot as it can possibly be borne over the wound surface and its area *ad lib.*; dry and apply dry wool dressing. All this time your hands, instruments, and sponges have been under a stream of hot water, and defied the attack of the various organisms liable through contamination of tainted atmosphere, untrained assistants, incompetent nurses, or ignorant probationers, which I have already stated had a great deal to do with the repeated failures of asepsis in the so-called Listerian method, which, with its elaborate preparation and detail, to say nothing of getting up steam with a possible bursting of your boiler, took up a lot of unnecessary time, if not a whole morning.

In the after-treatment and re-dressing hot water is again resorted to. Your rubber sheet and bath being in position, the douche is turned on until the dressing of a week or more (which is as stiff as a splint from the primary oozing) practically falls off the wound itself; douche the wound thoroughly, which if not healed throughout is quite aseptic; dry and dress again.

To illustrate to you that I have given this method a fair trial, I shall now give you a short summary of a few capital operations performed by me in the Carlow Infirmary during the past five years, referring briefly to special cases and the advantages of this treatment. The good results thus proved will, I hope, convince you completely of the claims of this simple antiseptic agent, which is as powerful as any we possess, and can be obtained in the remotest district at very short notice. In amputations I have noticed that it causes quicker adhesions of the flaps, which under the old method and steam were cold and flabby, but which the hot water makes warmer than the body, causing capillary activity,

which is continued by the warm wool dressing, and results in healing by first intention. This has been the case in three amputations of the thigh; ten below the knee, two of which were primary in one patient after a railway accident, and who was suffering from advanced mitral disease, which in no way interfered with the good result; six amputations above the elbow; one at the elbow for senile gangrene in a patient aged seventy-two.

In empyema, having made a large incision, I flush out the pleural cavity until the water returns clear, and drain. I have had three cases, all of which resulted in complete cure. In the last case I removed the drainage tube at the end of the third week. In excision of the os calcis and astragalus, treated in the same manner, the wound was quite healed and the patient able to walk about with a pad under the heel at the end of three months. Strangulated hernia with radical cure, fourteen; two of these occurred in men over eighty, all successful. Umbilical hernia, two; excision of hip, one; psoas abscess, curetted, two; &c.

These capital operations, taken at random from my general surgical work, are all examples of the results obtained from this mode of procedure. I do not include abdominal or gynæcological operations, to my experience in which branch of surgery I owe the adoption of hot water flushing in general surgery; and since I have used it exclusively I have had nothing but good results, knowing nothing of septicæmia, erysipelas, or any of their cousins. Hence my anxiety to bring it to your notice, claiming no priority. Though never having seen it described in text-books, nor yet observed it carried out in practice, I feel sure that some surgeons have been working in the same field. However, from time to time I have seen warm water "PLAYED" with, and squeezed over wounds with sponges; but this I want to impress on you is not what I mean by hot water flushing.

The success which I claim entirely depends upon the thorough comprehension of the facts—(1) that the temperature of the water is not under 115° ; (2) that you have gallons of it for use, which will insure a constant and unremitting supply from the beginning of the operation to the end, and by this obtaining the desired object—a perfectly aseptic wound.

ART. XXII.—*Notes on the Treatment of Scarlet Fever.* By HENRY NOBLE JOYNT, M.A., M.D.; Diploma State Medicine, Dubl. Univ.; Medical Superintendent, Bradford Fever Hospital; late Assistant Resident Medical Officer, Fever Hospitals, Birmingham and Dublin.

I FEEL almost bound to apologise for taking up the pages of this Journal with what at first sight seems such a trivial subject as the treatment of scarlet fever. Hilton Fagge, in his masterly treatise on medicine, considered ten lines a sufficient space to devote to it. His editor, in the second edition, increased this to three-quarters of a page. And yet scarlet fever is one of the most common of all diseases; it carries off annually from 2 to 6 persons per 10,000 of the population, is followed by a greater number of grave complications than perhaps any other human ailment, and requires careful nursing and special treatment not less urgently than, say, enteric fever. The following statistics, the only ones at hand, will show how careful treatment influences the death-rate of scarlet fever. During 1890, in Birmingham, 2,524 cases were treated in the Fever Hospital; the death-rate was 6·4 per cent. Four hundred and seventy-one cases were treated at their own homes; the fatality was 9·7 per cent. During the same year the death-rate in the Bradford Fever Hospital was 6·6 per cent.; the fatality of those treated at home reached 13·3 per cent.—that is, exactly double.

It is only of late years that the study of infectious diseases has taken the place it deserves in the medical world. Before the discovery of micro-organisms and their relation to disease our knowledge of fever was of the crudest nature, and, consequently, no rational treatment was or could be adopted. Since the discovery that infectious diseases are caused by specific micro-organisms our methods of treatment are slowly being revolutionised. As yet we are merely on the outskirts of a vast field of new knowledge as to the ætiology of these diseases, and our therapeutics are still more or less empirical; but, with an increasing insight into the nature of morbid phenomena, and an increasing knowledge of the chemical and physiological properties of therapeutical agents, we shall ere long have a greater command over the ills that flesh is heir to. And of no class of disease may this be said so certainly as of that great group caused by the development in the body of the specific pathogenic fungi.

To carry out the scientific treatment of any fever an intelligent grasp of its causation, nature, and effects is essential. Specific fevers are caused by the entrance into the system of definite micro-organisms, which multiply therein and produce changes, chemical or otherwise, inimical to its well-being. Although but a few pathogenic organisms have been demonstrated, analogy goes to show that every fever is due to a separate and specific bacterium, be it a micrococcus, bacterium, bacillus, or spirillum. The bacteria, having gained an entrance into the body, after a varying period corresponding to the stage of incubation, multiply to an enormous extent, so that in some diseases—as, for example, anthrax—each drop of blood may contain numerous bacilli. In other fevers, on the contrary, bacteria are never found in the blood. The struggle, however, between the invading germs and the invaded organism is not always one-sided. As the bacteria multiply they have two potent agencies to contend against. Perhaps at first the more powerful are the phagocytes, so ably described by Metschnikoff, but the “defensive proteids,” the “sozins” of Hankin, poisonous to the bacteria, play a no less important part. Should these defensive agencies be weak—should the leucocytes be few or the sozins deficient or wanting—the microbes have it all their own way, and either elaborate a substance poisonous to the system, which has been variously termed a ferment, a ptomain, a toxin, an albumose, and an alkaloid, or else their presence sets up toxic chemical changes in the blood and tissues. The phenomena of malignant scarlatina—the rapid poisoning of the nerve-centres, &c.—are a good example of such effects. In the consideration of the treatment of scarlet fever these two factors must, therefore, be kept in view—(1) the virulence of the scarlatinal virus; and (2) the resisting power of the patient; and our efforts must be directed to destroy or mitigate the one, and to aid or increase the other.

It is lamentable to confess that in spite of all our increased knowledge of therapeutics, and our insight into the secrets of physiology, we are almost powerless in the presence of severe cases of zymotic diseases. There are certain influences beyond our control which increase the gravity of the disease, and these require consideration; they are partly external, partly constitutional. One of the most important factors is epidemic influence. As Graves has pointed out, scarlet fever varies much at different times. In some years and in some places scarlatina rages with exceptional

virulence ; in other years in the same locality it may appear as a comparatively trifling complaint. Sporadic cases are generally mild, but as an epidemic gains force the type of disease becomes more severe. Season, too, has a modifying influence. During the autumn months scarlet fever usually reaches its maximum severity, although in my experience a larger proportion of grave and fatal cases occur in spring. Family predisposition furnishes an important factor. In some families it assumes a malignant type, and nearly all succumb, no matter how vigorous. Then individual constitution must be remembered. Strumous, ricketty, and weakly children suffer much more severely than the healthy, and concurrent or precedent diseases increase the gravity of scarlet fever. Lastly, of equal importance is the age factor. The greatest fatality occurs from two to four years of age, and two-thirds of all deaths occur under the age of five.

Theoretically the treatment would appear to be the injection, at as early a stage in the fever as possible, of a "protective proteid," the active principle derived from the blood-serum of an immune animal, "which has the power of destroying either the microbe against which immunity is possessed or the products on which the pathogenic action depends."^a Proceeding on such lines, Prof. Behring and Kitasato have cured both diphtheria and tetanus in mice and guinea-pigs, and Hankin has isolated the proteid which protects the rat from anthrax. But as the scarlatinal "sozin" has not yet been discovered, we must proceed on more empirical lines. Some years ago the "expectant," that policy of masterly inactivity, was the favourite treatment of all fevers, and is at the present day upheld by many physicians. Now, however, a policy of active, aggressive treatment is gaining ground. If we cannot render the organism immune to the action of bacteria, we at least can and ought to try to destroy them by bringing about what Professor Behring aptly terms the disinfection of the living body—either by killing the microbes directly or else by hindering their growth. No chemical has yet been discovered which can be given in doses sufficiently powerful to kill the bacteria without at the same time producing toxic effects fatal to life. We must, therefore, fall back on the alternative method of charging the system with a weaker and less injurious antiseptic, and so hinder bacterial development and reduce the quantity of toxic substances elaborated.

To carry out in practice the above theoretical conclusions, anti-

^a Hankin. On Immunity. *Lancet*. August 16, 1891.

septic treatment must be both local and general, must aim at destroying the micro-organisms at the seat of invasion as well as in the system. The scarlatinal germs enter the body chiefly through the mouth and nose. In any case, the scarlatinal virus, like the diphtheritic, exhibits a remarkable local action on the fauces and tonsils, and our efforts must consequently be directed largely towards the region of the throat. In fact, some writers believe that by a vigorous local treatment by certain antiseptics scarlet fever may be aborted. Be this as it may, frequent irrigation with antiseptic solutions is essential. The number of such available antiseptics is large, and each writer recommends his own favourite as a specific and the only specific. The mercuric salts, iodine, chlorine, eucalyptus, thymol, carbolic acid, boric acid, iron, chlorate of potassium, the alkalies, &c., have all been lauded, and are all useful. Personally, I find a strong solution of boric acid in glycerin, prepared and used as recommended by Dr. Manning,^a very reliable. It has the advantage of being not only innocuous if swallowed, but beneficial. The throat and nares should be thoroughly syringed out every three or four hours with this solution, and oftener if necessary. After irrigation I find painting the ulcerated structures with the thick boroglycerin, or with glycerin of iodine (1 in 7), or, better, with glycerin of thymol (1 in 10–50), a valuable addition.

The internal antiseptic treatment is not very satisfactory. In hospitals, at least, cases do not, as a rule, come under treatment sufficiently early to give it a fair trial. Of the many preparations at hand I have found thymol in full doses, dissolved in alcohol or olive oil, given with *nux vomica* and ammonia, the most useful. Quinine did not seem to give as good results as in enteric and other fevers. Of iodine I have little experience. Eucalyptus oil and the biniodide of mercury have been extravagantly praised, but hospital tests have not borne out the wonderful results claimed by their advocates. Indeed, the latter is often hurtful.

Besides the antiseptic, many other methods of treatment, theoretically and clinically, are valuable. These may be classified as follows:—(1) The eliminative, which aims at getting rid of the excessive waste products of metabolism caused by the fever by means of diaphoretics, diuretics, and purges. (2) The antipyretic, which, by reducing temperature, reduces waste, quiets the nervous system, and conserves the patient's strength. Hot baths gradually cooled are undoubtedly the best means of reducing temperature in

^a British Medical Journal. May 2, 1891.

children. Cold packs for adults, cold sponging, ice-caps, &c., are all useful. It is wonderful how, in many cases, delirium ceases, restlessness disappears, and sleep follows the application of water in some one of the above forms. The continuous-immersion-in-bath treatment, so successfully used in enterica by Dr. Barr, ought to be equally beneficial in scarlet fever, and deserves a trial. Antipyrin is well borne by children, and quickly and safely reduces temperature; quinine is less certain. (3) The stimulant treatment strengthens the heart, counteracts the nervous depression, supports the strength, and enables the patient to tide over the acute stage. Carbonate of ammonia, digitalis, caffeine, and strychnin, separately or in combination, are invaluable drugs. Strychnin seems especially useful in scarlet and other fevers. Of the value of alcohol it is difficult to speak. No drug has been so often prescribed, or so closely observed, and yet over no drug has there been so much discrepancy of statement as to its physiological and therapeutic properties and clinical value. Personally, I use alcohol sparingly; children, and indeed the majority of cases, do very well without it. But should the heart become feeble, and nervous prostration marked, the tongue dry and cracked, and the rash purplish, then it becomes a valuable remedy. It must in such cases be given in full doses and pushed. By a free use many lives have apparently been rescued from death, but very many more have been lost by its injudicious employment. Therefore, as Dr. Squire observes in Quain's "Dictionary of Medicine," "alcoholic stimulants are only to be used with great caution." (4) Acids relieve thirst, stimulate the secretions of the digestive tract, and prove refreshing, but have little other value. (5) The perchloride of iron is a universal and favourite remedy. Of its efficacy in diphtheria there is no doubt, and when diphtheria complicates scarlet fever it is useful, but in most cases it has little or no effect, and I have almost given up using it. In the large, hard, swollen tonsils in patients subject to tonsillitis it is chiefly indicated. Unfortunately, in spite of the most skilful treatment, a large percentage of our cases die, and in malignant scarlet fever all remedies seem equally futile.

On the general management and dietary of scarlet fever a few notes are necessary. Confinement to bed, free ventilation of the sickroom, a constant temperature of about 60° to 65° F., milk diet, and flannel worn next the skin, are the broad principles of management during the acute stage. Free ventilation is an important point: a scarlet fever patient cannot have too much fresh air, the

maintenance of a warm temperature is a secondary matter compared to it. A hot bath daily, and sponging the body over with acidulated water or a weak solution of glycerin is refreshing, and enables the skin to act. Milk diluted with barley, soda, or lime-water, or boiled, or made into whey, should form the staple diet. Pancreatised and peptonised milk is more readily digested than plain milk. Cream is valuable for children. Beef-tea often sickens and causes diarrhoea in children; as ordinarily made it is stimulating rather than nutritious, but when prepared by digesting for a few hours, in a warm place, finely minced raw meat in water acidulated with hydrochloric acid, a highly nutritious fluid is obtained. Eggs are excellent. Sipping hot water or coffee assuages thirst, and the patient should be allowed to drink as much water as he cares, provided the quantity is not excessive.

As desquamation is most active during the second and third weeks, it is well to keep the patient in bed during this period. By this means the epidermic scales are prevented from being scattered about. A course of hot baths and inunction of the skin with some oily substance hastens the detachment of the epidermis. Many recommended the use of antiseptic inunctions to destroy infection, and in private practice this may well be carried out. Dr. Allan Jamieson^a has advocated the use of resorcin-salicylic soap to hasten desquamation, but equally good results may be obtained by the use of any other soap and frequent bathing. Carbolic and other strong soft soaps are injurious to most skins. The patient should not be allowed to mix with his fellows till all signs of desquamation have disappeared from the soles of the feet.

It is well to keep the patient on low diet until the temperature falls to normal. Then bread, butter, rice, puddings, and other light farinaceous food may be substituted. In hospitals it is customary to withhold meat for the first three weeks.

A brief notice of the treatment of the chief symptoms and complications may not be amiss. As no one method of treatment is the best, and lest I should seem dogmatic, I may here say the lines recommended are those from which I have observed the best results in cases sufficiently numerous to exclude fallacies, and I have at some time or other seen most remedies tried on upwards of 5,000 cases of scarlet fever. Delirium, restlessness, and sleeplessness usually co-exist with a high temperature, and until the temperature is reduced hypnotics are of little use. Reduce the temperature, and

^a Lancet. September 12, 1891.

sleep and rest often follow. Baths and cold packs are useful. If the delirium be violent, in young sthenic adults Graves' mixture of tartar emetic and opium may be tried. Paraldehyde is, I believe, the most certain hypnotic, given in full doses. It acts rapidly, often within five minutes, is not depressing, but its nauseous taste is an objection. Bromidia, the bromides and chloral, sulphonal, chloralamide and urethan are useful in descending order. Morphin had better be postponed till other hypnotics are tried and found wanting. Laryngitis is often a serious complication. Hot fomentations, bromide of ammonium or potassium given every hour, combined with the use of the steam kettle medicated by creasote, tinctura benzoini co., conium, &c., may relieve it; but should the symptoms of laryngeal obstruction become marked there should be no hesitation in performing tracheotomy. To be successful, tracheotomy must be done early, and then the results are not unfavourable. Salicylate of sodium in scarlatinal rheumatism is a specific. In very few cases indeed does it fail rapidly to relieve pain. It is best given in moderate doses every hour or two hours till effective, and then in smaller doses at longer intervals for some days. If there is much arthritic swelling, wrapping the joints in cotton-wool is pleasant to the patient. The salicylate should always be pushed if there is any sign of pericarditis, even of nephritic origin. Under this treatment I never remember having seen effusion sufficiently abundant to be detected. Two very common and troublesome complications are otorrhœa and secondary rhinorrhœa, the latter coming on after the second or third week. For otorrhœa the usual method of syringing out the ear, carefully drying it, and insufflating fine boric acid powder, as a rule, suffices; but in strumous children sometimes a thin, foetid, and acrid discharge continues for days and weeks. An instillation of alcohol (at first 1 in 4, then stronger) in water holding in solution boric acid, thymol, or other antiseptic deodorant, poured into the meatus, the child lying ear upwards, and retained for about twenty minutes, three or four times daily, often succeeds where the dry method fails. Alcohol should not be used if there be any acute inflammation. If any redness and tenderness appear over the mastoid process behind the ear, or should the ear stand out at right angles, an early and free incision should be made down to the bone. Free depletion is essential, and poultices increase the hæmorrhage. The secondary rhinitis of strumous children is difficult to cure. Syringe the nares frequently with an antiseptic, alkaline or weakly astringent, lotion, and then pass a quill of lint

or absorbent wool smeared with an antiseptic ointment, preferably one of the mercurial preparations, into the meatus. At the same time, in both otorrhœa and rhinitis, the strumous habit must be treated by cod-liver oil, the phosphates, and iodides.

The last and most important complication which needs notice is nephritis. It is well to test the urine daily for albumen, especially about and after the 17th day, as nephritis may come on without warning. When kidney disease manifests itself, the patient should be purged, wrapped in flannel, placed between blankets in bed, and put on a strictly milk diet. Mild cases require no other treatment. The favourite purgative is pulv. jalapæ co., but often it causes vomiting, and jalapin given in sugar is less bulky and nauseous, and therefore preferable. Should the urine be scanty, in addition to purgation, hot fomentations or frequent hot poultices to the loins, hot baths and blankets may be employed. Diuretics are of doubtful value, although some of the best authorities highly recommend them. The milder potassium salts, especially the citrate, are the most useful. If there is much anæmia the iron salts are better. In the majority of cases the urine becomes plentiful in a few days with or without diuretics. Blood is present in a small proportion of cases at the onset or within a few days. Some, happily few, withstand treatment, and drift into chronic Bright's disease—the smooth, white kidney. If the hæmorrhage is excessive or long-continued, hazelin, ergot, and perchloride of iron seem to be the most useful drugs; gallic acid and other astringents have little effect. But rest in bed, and milk diet, copious draughts of water, hot baths and hot local applications, and strict attention to the bowels, are the main points in the treatment of scarlatinal nephritis. Dropsy needs little comment. If treated early, on the lines laid down, the dropsy of scarlet fever gives little trouble. If neglected, however, it is a very serious complication. Digitalis and iron seem the most useful diuretics.

Characterised by headache, uncontrollable vomiting, convulsions, and coma, uræmia is a formidable result of nephritis, and requires active treatment. For convulsions I have found the following successful:—At the onset of the convulsion a brisk purge is administered; calomel, grs. 2–5, or croton oil, \mathfrak{m} ss.–i. rubbed up in butter, is placed on the back of the tongue. At the same time an enema of chloral and bromide of ammonium is given. Should the convulsions last for more than five or ten minutes, chloroform is pushed. In nearly every case the patient sleeps soundly after, and there is no return of the fits. A gag prevents the tongue being

bitten. A mixture of chloral and the bromides is given for the next few days. The most troublesome, and the least amenable to treatment, are those cases in which the attacks are of short duration and frequent. For these hot packs are often useful. Pilocarpin is an uncertain and, in some cases, a dangerous remedy; though, no doubt, it sometimes is very valuable. But diaphoresis may readily be obtained by other means less depressing. A uræmic symptom quite as formidable as convulsions is vomiting, uncontrollable and incessant. Although central, it may be stopped by local treatment. All nourishment by the mouth should be stopped, and thirst quenched by ice or hot water alone. Bismuth and soda, and hydrocyanic acid, may be tried, or small doses of spirits of ether in water given every half hour; but I have found washing out the stomach with an alkaline solution of soda and borax, which dissolves and removes the irritating bile-stained mucus, more effectual. Since adopting this plan, I have never had any difficulty in stopping the emesis. A hypodermic injection of morphin was valuable in a couple of cases.

Most of the important complications of scarlet fever have now been noticed; and if the hints thus briefly and imperfectly thrown out may prove in any degree useful to a brother-practitioner in treating this omnipresent disease, I feel this paper has not been written in vain.

ART. XXIII.—*Non-Malignant Tumours of the Breast and their Treatment.* By O. JACOB, M.D. Translated by CHARLES GREENE CUMSTON, B.M.S.; Student-Associate of the Royal Academy of Medicine in Ireland; Assistant at the Butini Hospital, Geneva, Switzerland.

DEEP sutures, which were condemned with good reason a few years ago as being a cause of infection, are employed to-day by all surgeons. Prof. L. Tripier has had occasion to employ deep sutures in the mammary gland, in partial amputations of the breast. He found that, combined with the incisions, no matter how deceitful, they allowed at the same time to be completely fulfilled the indications in the special point of view for which they were intended, and at the same time they could give excellent results from the point of view of preservation and perfecting the shape of the breast. As they are applicable only to tumours obliging merely a partial amputation of the breast, I shall only speak of fibroma

and certain cysts, although sarcoma which obliges total removal is sometimes classed in the group of non-malignant tumours.

As this article is limited, I shall speak of certain points alone in the history of fibroma which have been almost completely left aside, and which, nevertheless, appear to play an important part in the pathogeny of these tumours. I particularly insist on the following points—(1), the relations of chronic mastitis with fibroma and cysts of the breast; (2), the pain in fibromata. I will then describe the methods of treatment employed in non-malignant tumours, and will finish with a description of the method employed by Dr. Tripier.

Fibromata are the most frequent tumours of the non-malignant type met with in the breast. Out of 34 cases Labbé and Coyne found 18 pure fibromata; 3 cysts, by retention of products produced by connective hyperplasia; 8 sarcomata, 4 of which had fibromata for a starting-point. According to these gentlemen, sarcoma is at its origin only a fibroma. The age at which fibroma appears corresponds to the sexual period of woman—that is to say, from twenty to forty years. Never, according to Billroth and Birkett, do these growths appear before puberty, and never after the age of forty; they develop most frequently between the age of sixteen to twenty-five. The fibrous tumours met with after twenty-five years of age may have formed during or after the first few years following puberty, but their origin passes more easily unnoticed when the nucleus of the tumour forms in the deep part of the mammary gland. Nélaton and Birkett maintain that unmarried life favours the development of these tumours; Labbé and Coyne believe the contrary. After Velpeau's statistics they are, above all, found in virgins and women who have never had children. Both breasts are rarely attacked at the same time; the right about as often as the left breast.

According to Labbé and Coyne^{1a} menstruation interferes only in certain cases, and only to explain the development of the growth. This ætiology appears to me to have a considerable importance; it is nearly always the only cause which can explain the development of multiple fibroma in women who have never had children or abscess of the breast. If these patients are carefully questioned as to the condition of their breasts during the menses, they state that they experience often a greater tension of the organ, with redness, heat, swelling, and pain—characteristics which testify

^a The numerals refer to the List of Works given at the end of this paper.

to a severe congestion, and even inflammation, of the gland. In fact, a veritable menstrual mastitis develops in the first stage, but later on it will leave in its stead fibrous nuclei. Under this influence of the genital reflex, the vessels so numerous in the mammary gland become dilated, and a more active diapidesis of the white globules takes place, or for those who do not admit Cohnheim's theory, a proliferation of connective cells in the connective tissue surrounding the acini. To this condition correspond the swelling, redness, &c., and a lobulated and indurated condition of the breast. A swelling of the axillary glands may also be observed, which must not be confounded with the aberrant portion of the gland, situated under the posterior border of the pectoralis major when this is congested. The phenomena of which I have just spoken disappear with the menses. But in time, under the influence of repeated congestion, nodosities persist in the breast, neoplastic elements are changed into connective and fibrous tissues, and a fibroma is formed. In the first few years one or both breasts are increased in volume in a diffused manner at the time of the menses; then after a certain time a solitary nodule is found by palpation; this grows, and it is the increase in size that brings the patient to the surgeon (Case IV.). I believe that menstruation has a great importance in the ætiology of fibroma, by producing a localised interstitial chronic mastitis. In fact, chronic mastitis is the first stage of fibroma.

According to Kennedy, a fibroma, even solitary, is nothing more or less than a circumscribed interstitial mastitis, in the highest degree of development, which in encysting ceased to communicate with the neighbouring parts, thus forming an isolated tumour, and developing as such. According to König³, fibroma represents the last degree of this form of mastitis, which is far from being known to surgeons as it ought to be.

If more attention were given to this form of interstitial inflammation, the appearance of a number of tumours—such as certain simple or multiple cysts, and fibroma in breasts apparently healthy—would be easily explained, to judge from analyses of the cases which have been published.⁴ At the onset of the disease (Case II.) there are found, in one or both breasts, round nodosities—more often quite hard or painful—which a proper treatment, well directed at this epoch, could cure. After a long insidious period, these attacks of chronic mastitis may follow a rapid course (Case I.), and the disease develops after a few succes-

sive attacks, often simultaneously in both breasts; the patient may, perhaps, not notice that the nodosities have developed, and it is only when they come to the surgeon that they are discovered (Case I.) It is, above all, at the time of the menses that new nodosities develop. The breast becomes painful, and quite often secretes a more or less watery liquid, sometimes resembling milk (Case V.). Often, also, there is tumefaction of the lymphatic glands.

If a histological examination of the nodosities is made, the morbid process in the connective tissue may be seen in all stages—the most recent degree is an infiltration of embryonic cells surrounding the acini, while the oldest degree consists of adult connective tissue. An examination of a section taken from Case I. showed a diffused lesion of sclerosis in the parts less attacked; the tissues surrounding the acini are healthy; there is an abundant infiltration of small cells, so marked in some points that the acini are compressed, atrophied, and the epithelium has undergone a granulo-fatty degenerescence. In the parts of the tumour removed by operation, corresponding to the tumours felt on the living subject, I found a pure histological formation of fibroma; on section the tissue was hard, and “cried” under the knife, of a pale yellow colour in some places, changing to rose. A few acini were dilated and more or less drawn out; the epithelium was more or less degenerated, and surrounded by a great number of connective tissue fibres placed concentrically to the acini, crossing each other, and in the spaces are seen connective tissue cells and a few vessels. This case shows well, it seems to me, the evolution of the morbid process in the connective tissue—in the first degree there is inflammation; in the second there is a metamorphosis of the cells into fibrous tissue compressing the acini; in the third all the cells are transformed into adult connective tissue and a veritable fibroma is organised.

Besides the preceding cases, in which the inflammatory morbid process ends in a fibroma, there are others in which cysts develop at the same time as the fibroma, varying in size, and sometimes quite numerous; sometimes the cysts alone form. In my second case, which, in the clinical point of view, resembles closely the cystic disease of Reclus, I found an example of an inflammatory morbid process ending at the same time in fibroma and cysts. After extirpation of the mamma I found numerous disseminated nodosities, and the gland presented sclerosis in parts. These nodosities offered the same characters as in the preceding patient—infiltration of embryonic cells, enveloping the acini and compressing them, and a

mass of compact connective tissue. Besides these nuclei of fibroma, I found tumours of various sizes—some the volume of a millet seed, while others were the size of a walnut, round, very hard, and in great quantity. When pricked with a needle these small tumours sent forth a jet of different coloured liquids with great force, and even in some places a noise was heard. These tumours were especially numerous on the posterior aspect of the glands. These small nodosities differ very much from the first, as they are cysts. Their formation has been well studied by Labbé and Coyne. These gentlemen have shown that cystic cavities, gaps, and spaces which are formed by means of the acini are to be found in the fibroma. The acini drawn and stretched in all directions by the development of peri-lobular connective tissue lengthen and broaden greatly. The excretory canals are effaced, in certain points obliterated and atrophied by the morbid process in the connective tissue; they dilate in the intermediary portions of their course.

The epithelium of the acini and that of the excretory canals does not generally remain indifferent to the continued irritation which exists in their neighbourhood, for they tumefy and proliferate. The acini are dilated by the liquid which they secrete, perhaps in greater quantity than normally, and which cannot be expelled. This liquid, by the pressure that it exerts at the periphery, may produce a degeneration of the epithelium, which falls into the liquid; and here it is found in the form of cells whose character is quite difficult to recognise, and which have undergone a granulo-fatty degeneration. This formation of cysts may remain localised in some spots, and is found especially in the excretory canals (Case V.), but it may be generalised, as well as in Case II. This morbid connective tissue formation ending in the organisation of cysts seems to me to apply to the formation of cystic cavities in certain cases of Reclus's disease. This idea seems to me justified by my second case. In this instance we find that the patient came into the hospital for the first time on the 4th of March, 1887, to be operated on for a tumour of the left breast, which had developed in three months. But from the epoch of her first menstruation the patient has always complained of pains in the left breast at the time of her menses, and the gland used to become enlarged and lumpy at that time.

The tumour which was found was about the size of a mandarin, hard, the surface nearly smooth, movable in its deep parts, and under the skin spontaneously painful, especially at the time of the menses,

and on pressure. The diagnosis was fibroma of the breast. Removal showed that it was a cyst with thick fibrous walls, filled with a reddish serous fluid. All around the cyst, and invading nearly the entire gland, are found numerous small cysts, some containing a butter-like matter, others a serous liquid. In the midst of these cysts are found numerous fibroma-nuclei composed of connective tissue.

The patient came back the following year to have the right breast, which is invaded in its turn, operated on. A hard, resistant movable tumour the size of a turkey's egg is seen, forming an appreciable projection exteriorly. Besides this tumour, others of variable size are discovered, and the breast feels as if it were full of grains of lead. A partial removal of the breast was performed, including in the part removed the largest of the tumours.

During the operation an accidental incision was made in the largest tumour, whence a pale yellow-coloured liquid squirted out. The piece removed was about the size of a fist, and the large cysts which had been incised had caused it to retreat. It was composed of a tissue comparable to that of a healthy gland. Only in the middle of this mass there was a great number of different sized cysts; the dimension of the one incised was that of a hen's egg. The small cysts appeared composed of a thin membrane, but which was very resistant when an attempt was made to break it.

Microscopical examination showed the connective tissue surrounding the acini to be normal, but nevertheless slightly thickened, and sclerosis was present about the clusters; great proliferation of the epithelium of the glands was noted. These are the lesions described by Malassez, Brissaud, and Cornil in the disease of Reclus. This patient, as I have already said, is a proof of the relations which exist between fibroma and cystic disease. This opinion was put forward by Trélat in a discussion which took place in February, 1888, at the Société de Chirurgie⁵, when he said, "if we take up the clinical point of view, between the cysts of the acini of Reclus and fibrous hypertrophy, vegetating fibroid cysts and true adenoma, the differences are not great, or at least the distinction is difficult; all these types are bound together, and even coincide." Kirmisson also does not make cystic disease a special entity. It presents itself, he says, sometimes as an original disease of the epithelium, at other times as a consequence of different alterations, such as adenoma, fibroma, senile degeneration. And lastly, Phocas, in

his thesis, and with him Tillaux, say that cystic disease is a chronic mammitis (*maladie noueuse de la mamelle*).

Without going further, I would only say that the development of fibrous tissue in the mammary gland can explain in certain cases the pathogeny of Reclus's cysts. If they are not large enough to choke the glandular acini, they at least irritate them, and can produce a proliferation of the epithelium, hypersecretion and formation of cysts. This importance of inflammation of the connective tissue in the pathogeny of Reclus's cysts is to be found in a great number of cases of this disease in which, as Quain remarks, a great frequency of abscess of the breast is noted. According to this author cystic disease is simply a neoplasm; it is caused by irritating lesions primarily acting on the epithelium. He calls it "epithelial cystic cirrhosis," for he says, "if the interlobular connective tissue is healthy, the same tissue surrounding the acini contains sclerosis." So from what has been said I think I am able to furnish some proofs as to the influence of inflammation of the breast in the development of fibroma, and of the near relations which, in certain cases, unite the fibrous morbid process with the cystic disease of Reclus. This influence of inflammation of the breast on the development of fibroma, I have shown in women who have never had an abscess of the breast. I have spoken only of chronic mastitis consecutive to the menstrual flux; but fibroma may still be the termination of infectious inflammation. In the examples that I have cited, the white globules passed by diapedesis into the connective tissue, favoured by the simple congestion; the metamorphosis of these cells into adult connective tissue was made with great slowness. In infectious mammitis an important element, the microbe, intervenes; it is by this organised body that a more considerable proliferation of connective cells is brought about, cells which are destroyed and produce pus; or, if they resist, they undergo a rapid metamorphosis into connective tissue. Now the difference between infectious and menstrual mastitis, in the point of view of the formation of fibroma, is that, in the first case, the fibrous nodosities rapidly appear. They are hard, multiple nuclei, occupying generally both breasts, as Phocas has described in his thesis. He wished to make a special disease of this condition under the name of "lumpy disease of the mamma," although without reason, it seems to me, for this is not a particular disease—it is only an intermediary condition between puerperal chronic mastitis and fibroma. As Cooper and Velpeau have described it—according

to the latter, traumatism has a great influence on the development of fibroma, by producing a localised spot of mammitis, which evolves in the direction of the fibrous tissue.

This ætiology, accepted by a great number of surgeons, is, above all, applicable to completely isolated fibroma, appearing in a breast which has been healthy up to that time. Chronic mastitis produces multiple fibroma in women whose breasts are painful at the time of their menses. From the relations existing between inflammation of the breast and fibroma, which I have tried to point out, I shall deduce certain consequences when speaking of the treatment.

The commencement of development of fibroma more frequently than not passes unnoticed, and ordinarily the patient does not seek the surgeon until the tumour is about the size of a walnut or more. The tumour is lumpy and hard, movable in the deep parts and under the skin; no pain on pressure. It is only when the nerve-endings are surrounded by fibrous tissue that the pain appears; this is very frequent in cases of multiple fibroma. In Cases I. and II. the pain was at the first quite mild, and coincided with the menses, disappearing with them; then it preceded and followed them. After a time they persisted, and the patient suffered constantly. The pain was shooting and violent, exaggerated by pressure on the tumours. It irradiated nearly always in the muscles of the shoulder and arm (Cases I. and II.).

In certain cases pain is precocious, even preceding the appearance of the tumours (Case I.); in others it appears at the same time as the tumours, while in some rare cases it is entirely wanting. There is a condition which greatly favours pain in fibroma of the breast—it is the soil in which these tumours develop. Nervous women are very subject to it; the patient in my first case is decidedly a neuro-pathic. In syphilitics, and, above all, subjects who have had malaria, it is well known how often neuralgia exists. Consequently, in patients who have painful fibroma, their antecedents should be carefully inquired into, and sometimes by applying a well-conducted treatment the pain may disappear.

A neuralgia of the third and fourth intercostal nerves, which are covered by the mammary gland, must not be confounded with a neuralgia of the breast, as has frequently occurred. The pain in the mammary gland may be of reflex origin, and it is not rare to observe patients who, having affections of the uterus or its appendages, complain of pain in the breast, which disappears when the genital affection is treated.

In Case II. the pain which had persisted after operation rapidly disappeared when the metritis from which she suffered had been treated. Consequently, pain in fibroma is not as rare as one might believe. When it exists, it is a sign of its non-malignant nature. In fact, the differential diagnosis between fibroma and scirrhus is very often so difficult that the question cannot be solved until a section of the growth has been made. Thus pain is a valuable symptom in the diagnosis. In fact, in fibroma I said that pain was precocious, that it preceded, or at least attended, in the great majority of cases, the tumour. In scirrhus, on the contrary, pain appears only at a relatively late period, when the glands are attacked, and compress the nerves. Patients are not alarmed by a painless tumour, which for the public is a sign of its being non-malignant, and the surgeon is consulted only when the pain appears—in other words, several months after the appearance of the tumour, when the chances of success are greatly diminished. Let me say, in conclusion, that fibromata can develop slowly, remain stationary for several years, and then suddenly enlarge; they can change into a malignant tumour, of which I have shown several examples. This possible termination of non-malignant tumours is an indication to surgically intervene when medical treatment is without effect.

Treatment.—This may be medical or surgical. The expectant treatment recommended by certain surgeons should not be the general practice. It should be tried only in timid patients, or when the tumour is too small to propose an operation to the person; at all events the case should be carefully watched.

Surgeons are of different opinions as to the value of medical treatment, and some discard it completely. Billroth says:—"A veritable and complete resorption is never observed; the different salves and frictions only irritate the skin, and cause it to adhere to the tumour. Instead of a cure an ulceration and more considerable growth is obtained." Others, on the contrary, as Lebert, Storck, Thierry, and Broca, attribute to medical treatment numerous and incontestable successes. These results, too apt to be forgotten to-day, should consequently not discredit a treatment which can render great service in certain cases. It has even been credited with possibly curing cancer. If it be true that it fails in a great number of cases, and many times because it is applied too late, there are other cases in which it may produce a cure.

I have shown that mastitis plays a considerable part in the development of fibroma of the breast, and it is, above all, against

this element that medical treatment fights; consequently it should be employed in all cases of multiple fibroma, when the gland is filled with hard nuclei, developed after repeated congestion of this organ. Under the influence of this treatment—especially if applied at the beginning, before the neoplastic connective tissue is transformed into fibrous tissue—congestion, chronic inflammation, &c., may be seen to disappear, and a partial absorption of the tumour to take place, and often even the entire growth to disappear completely. The cases in the thesis of Phocas show perfectly that medical treatment may be most useful in certain cases, for if it succeeds the patient avoids an operation which is not without danger, and if medical treatment fails the patient will more readily submit to an operation than if it were proposed immediately.

Medical treatment consists of iodide of potassium given internally, and mercurial and iodide frictions externally. The objection made to this treatment—that it produces mercurial salivation, and causes atrophy of the breast—do not appear to me to be serious, for this may be easily avoided by employing the frictions in a judicious and moderate way, in administering the iodide in small doses, and by not keeping up the treatment for too long a time.

The most important element for obtaining a cure is compression of the breast. Samuel Young was the first to employ it; Récamier, and especially Broca, made it popular in France. The latter invented numerous apparatus in order to perfect it. According to this author, this method gives excellent results in a short space of time; at the end of two or three days the improvement is marked, resolution continues quickly, and may be complete at the end of from two or three months.

Dr. D. Mollière, of Lyons, recommends us at the same time to employ sweating. This gentleman has by this means obtained rapidly-cured cases. "In cases of doubtful diagnosis," he says, "sweating should be provoked during several days, and chronic mastitis can be eliminated from the diagnosis, if the patient is not immediately cured."⁶ He covers the breast with a salve containing pilocarpin, and then envelops it with cotton, and the whole is covered with waterproof linen. Medical treatment is to be employed only in fibrous tumours of the breast; it should be continued for two or three months, and it is only after this time that a surgical operation should be performed, if this treatment is unsuccessful.

In speaking of pain as a symptom, I pointed out the importance as to the subject in which the tumour develops. Consequently it

is important to treat the general health, inquire into the antecedents, and look for diseases of the genital organs; thus sometimes a cure may be brought about and the pain diminished. Surgical treatment is that of choice in non-malignant tumours of the breast. Billroth⁷ says, "as a principle, never remove the entire tumour in a breast, no matter what may be its nature, if it has existed for some time and continues to grow. It should be removed, because it extends more and more," and may take the form of malignant medullary sarcoma—a carcinoma. Tumours have been, and are still, encountered which for many years were considered as non-malignant, and which take on a malignant character later on.

It is better to remove a tumour of the breast, because it deforms the organ. Besides, on account of the knowledge so widely spread among the public, there are many women who lose all repose and tranquillity because they are afraid that their "tumour" may change into cancer. The surgeon should for this reason advise removal, if the patient is confident as to his decision. Reclus⁸ is of the same opinion: "The surgical doctrine of to-day tends more and more to not allow neoplasms of the mammary gland to linger, even if regarded as non-malignant, for as the age of cancer approaches, that is to say, the menopause, all foci may give birth to a malignant tumour."

Among the surgical procedures formerly employed, I will only mention for memory's sake the subcutaneous breaking up of the tumour as performed by Marshall Hall; irritating interstitial injections practised by Luton, of Rheims, and compression, of which I have spoken. The only surgical treatment employed is removal of the tumour. Galien was the first to indicate the procedure for extirpating the breast, and recommended the knife. After him, in order to avoid loss of blood and the dangers of extensive wounds, surgeons preferred the slower procedures, such as cauterisation alone or employed with the knife.

Cauterisation was performed in two ways—either the neoplasm was directly attacked, or linear cauterisation was performed. For the first method Manec employed the salts of arsenic; Landolfi, of Naples, recommended a paste composed of chloride of zinc, bromine, chloride of antimony, and chloride of gold. Girouard, of Rheims, who brought to great perfection the method called linear cauterisation, enucleated the tumour by squeezing it between two steel blades, and then destroyed the pedicle with Vienna paste. This was nothing less than removal of the tumour—the caustic replacing

the knife. I will mention, while speaking of cauterisation, removal by means of Chassaignac's ecraseur, the elastic ligature which is due to Sylvestri, of Padua, and the galvano-cautery. All these procedures, which a few years ago were employed with good reason, are to-day left aside by nearly all surgeons, and the knife is the only instrument employed.

When the tumour is enveloped by a layer of cells in which it is encysted, or if it is adherent to the gland two procedures may be employed. One is enucleation, the other is partial amputation of the breast. Enucleation, when possible, seems to be the operation to perform, for it is of a remarkable simplicity and without danger. In fact, the skin only is incised, leaving the gland untouched; nevertheless, according to Labbé and Coyne, this operation "is in contradiction with what pathological physiology teaches us as to the so-called adenoid tumours and the recurrences which take place. In fact, this neoplasm forms around the glandular lobules, whose connective tissue surrounding the acini was the starting-point of the hyperplasia, following some irritating morbid process. By performing enucleation a mass of glandular tissue is left at the bottom of the wound, which runs a great chance of undergoing the same metamorphosis as the parts removed." Now, on the other hand, the operation of enucleation is not so serious, even as a partial amputation of the breast, and which, as to shape, gives a good result; on the other hand, the danger of a recurrence of fibroma is too little feared, although Labbé and Coyne mention a case, but nothing proves in this case that this was a new tumour more than a recurrence. Consequently, this operation deserved to be practised, and, when possible, should be preferred to partial amputation of the breast, especially in solitary fibroma slightly adherent to the gland. According to Billroth the operation should be performed as follows:—The patient placed on the table, with a pillow under the trunk; if the tumour is not larger than a big apple, and the skin normal and movable, the tumour is tightly seized with the left hand in such a manner as to cause it to project under the skin, and an incision is made, following its longest diameter. After section of the skin the tumour forms a hernia from the incision, and is then freed by little incisions. It is then seized by the left hand with a Museux forceps, or by an assistant, and then drawn out. Its extraction is completed with the knife or scissors, the wound drained, and the skin sutured. When the tumour is limited, and when it cannot be separated from the gland with which it forms a mass, as in cases of multiple fibroma,

the glandular portion must be removed. This is partial amputation of the mamma, although after the lesion has extended to different parts of the glands; for under the influence of this intervention other hard nuclei are often seen to slowly diminish in size, and after a longer or shorter period to disappear completely. This is what happened in Case I.

Partial amputation of the breast may be of use in certain cases of the cystic disease of Reclus, especially in those where there appear to be direct relations with fibrous products of the breast. Case II. was perfectly and completely cured by partial amputation of the organ, and the piece removed showed clearly on examination that we had to do with a case of Reclus's disease. It is better, therefore, from an æsthetic point of view as well as from the gravity of the intervention, to select partial amputation in preference to total. This incomplete removal may suffice to bring about absorption of the remaining diseased parts.

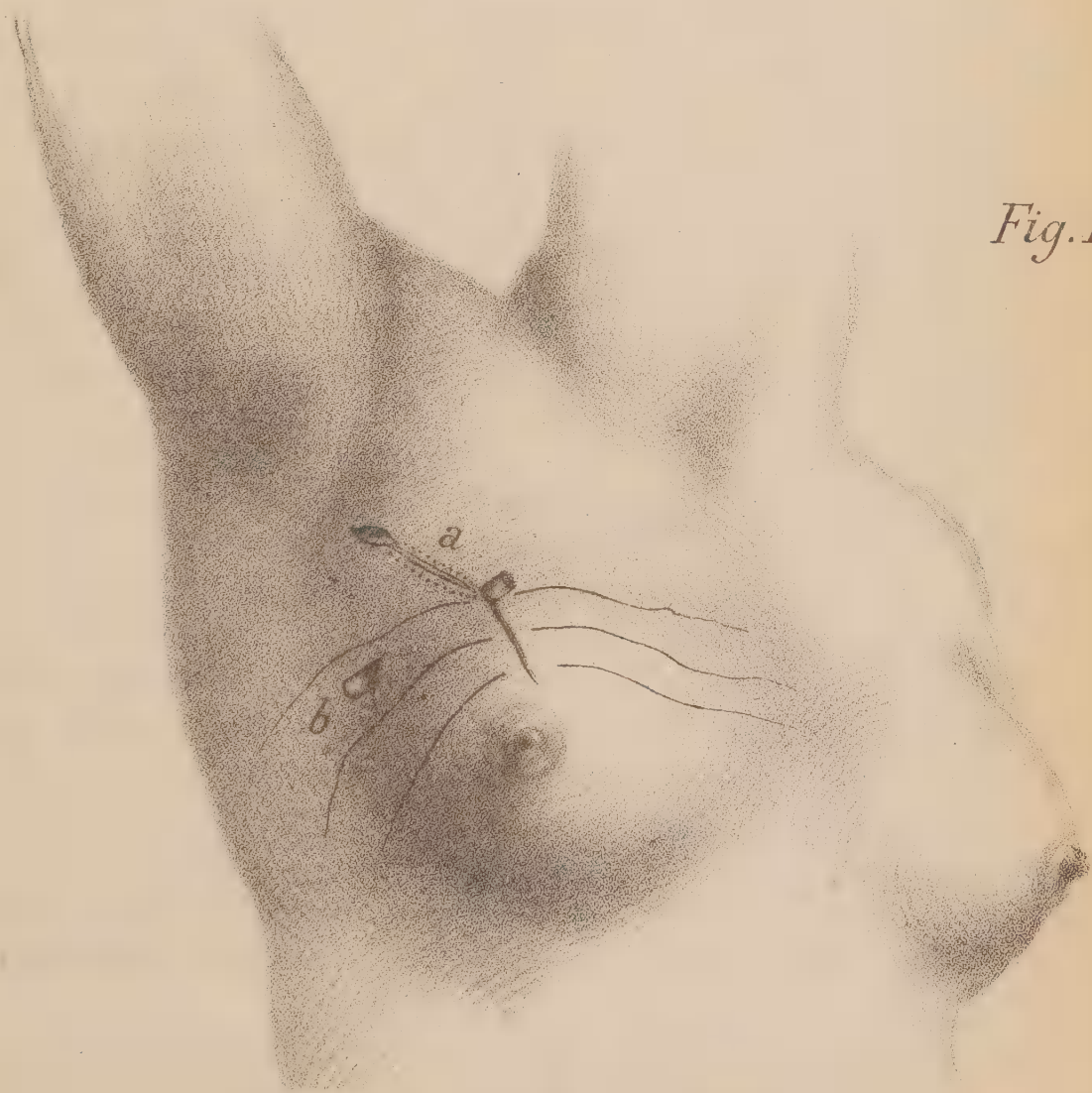
To perform partial amputation of the breast, if the skin is movable, an incision is made, following the greatest diameter of the tumour; if the skin is adherent a flap should be made, by making two curved incisions, corresponding to the transverse diameter of the growth. The tumour being brought into view, one to two centimetres of the gland itself are excised in order to remove all diseased glandular parts, the skin is sutured, and a drain inserted. By this method patients always bear a mark of the operation, for the breast no longer has its ordinary shape. In the spot corresponding to the portion of the gland removed a depression exists; all the more visible the greater has been the removal. The breast is sunken in, and the nipple may retract, while the skin adheres to the deep parts. Such are the inconveniences of great importance, especially in young women, which led Professor Tripier to make deep suture of the gland and suture of the skin, that is to say, two planes of sutures superposed upon one another.

I will now describe this operation. Having shaved the armpit, and all necessary antiseptic precautions having been taken, an incision is made over the tumour, directed from above downwards and from behind forwards, parallel to, and following the external border of the pectoralis major; the length of the incision varies, but should not be so long as to reach the areola. After incising the skin and subcutaneous cellular tissue, the tumour is cut down upon, and the incision deepened, so as to come to loose submammary tissue, which is situated over the pectoralis major, separating it

Fig. I.



Fig. II.



from the glands. Both halves of the tumour are now separately removed with the portions of the gland which contain sclerosis. The portion removed (see Fig. 1) has the shape of a triangle, with the base situated at the periphery of the gland and the apex near the nipple. The size of the segment removed depends upon the extent of the lesions; in one case Professor Tripier removed one quarter of the gland. When bleeding is staunched, the first drain destined to assure the flow of liquids which may exist in the submammary tissue is inserted. This drain is placed under the gland, and is commenced by a counter-opening made in the external furrow; the other end of the drain reaches the wound made in the gland. When this drain has been introduced the gland is sutured with three catgut sutures; the first and third are at the extremities of the wound, the second in the middle (Fig. 1); this forms the deep or supporting suture. The catgut is introduced from without inwards, entering the surface of section of the gland. When this has been accomplished, the second drain is introduced, which forms a right angle with the first; it is placed in the gland, with the upper extremity directed towards the armpit, while the lower end passes out by the upper end of the cutaneous wound. The operation is completed by suturing the skin. This I will call the superficial or perfected suture. Three catgut sutures are inserted, while the intermediate ones are made with metallic wire (Fig. 2), the wound is washed, the drains are examined, to be sure that they can fulfil their functions, and a bandage is applied. This procedure is employed very often by Professor Tripier, for it is the most suitable for tumours situated on the supero-external side of the breast (Cases I., II., III., and IV.), and which, as has already been said, adhere intimately to the gland.

The advantages of this method are that the woman has no trace of deformity, or of the operation—an end which should be all the more sought for, because, as I have shown, the affection in which this procedure is employed occurs especially in very young women. The most marked deformity, when the suture is not made, is a crater-like depression over the portion of the gland removed; the shape of the breast is destroyed, for the gland being removed the breast lengthens and sinks in. By suture of the gland the circumference of it is continuous; an æsthetic result is positively obtained. The breast, which before the operation may have been flabby and pendant, becomes prominent, firmer, and raised up, after the operation (Cases I., III., and V.) In Case III. the right breast

contained a fibroma, and hung down lower than the left. To-day it is on the same level and equal in size to its fellow. One patient told me that she was delighted with the operation, and two years after she said that it had given her the breasts of a young girl. No other deformity is to be seen excepting a rose-coloured line caused by the incision, and this disappears after four or five years. The line of incision is the only trace of the operation, and according to the situation of the tumour may be so arranged as to be completely hidden. In Case VI. the tumour was situated near the nipple. Prof. Tripièr made a curved incision in the line of demarcation of the skin and areola. When the skin was incised the curved incision became transverse, and the tumour was easily enucleated; the walls of the cavity thus formed in the gland by removal of the fibroma were sutured in such a way as to re-establish the continuity of the gland; drainage and suture of the skin. There was not a trace of the operation; the line of incision was lost in the junction of the skin with the areola. In this case the gland was sutured; although no part of the gland had been removed, and only an enucleation performed.

Prof. Tripièr leaves no cavity in the mammary gland, and whatever may be the portion removed—a segment of the gland, an enucleable fibroma, cysts, &c.—he always sutures the walls of the cavity thus formed in order to avoid, as I have already said, a depression which might form on account of adhesions of the skin with the cavity. Besides the incision of the skin on the supero-external side of the breast, and the periareolar incision, an incision of the skin under the breast may also be made in the furrow separating the organ from the thorax.

This incision, suggested beforehand by Gaillard Thomas, was practised for the first time—at least in Europe—by Rouge, of Lausanne. Dr. Mollière, of Lyons, has often employed it. The breast being raised, the sub-mammary serous bursa is opened, and the tumour is attacked on its deep surface. This incision may be more or less prolonged, but always following the sub-mammary fold, so as to allow the breast to be turned back and to remove the desired portion of the gland. Mollière says—“The gland, left to itself, falls, and the cicatrix is hidden in the sub-mammary fold to such a point that, after the operation, the gland operated on and the healthy gland cannot be distinguished. The operation is relatively easy; nevertheless, it demands a certain experience with the knife when the tumour is situated high up—as, for example, between the breast and clavicle, and it is then especially indicated in an æsthetical point of view” (9).

Prof. Tripier has perfected this procedure by adding the suture of the gland, and a better result is obtained. Not only is there no trace of the operation, but the shape of the breast is corrected—it cannot sink in, and is raised at the same time (Case V.). This operation is excellent in every way, and allows tumours situated high up to be removed. In Case V. one could reach 6 centimetres above the nipple. At the same time it hides the line of incision, and by suturing the gland the external aspect of the organ is happily modified; consequently, it should be performed whenever the opportunity offers.

CASE I.—Marie D., aged thirty-eight; admitted March 5, 1891. Patient is very nervous; menstruated at thirteen; has felt shooting pains in the left breast for one or two days. Married eight years ago; no children. In 1874 the patient received a violent blow on the left breast. From this time, at the epoch of her menses, the pain in the breast became violent; the left breast is larger than the right. Dr. Tripier was consulted in 1876, and prescribed a medical treatment, which greatly improved the patient for some months. But the pain returned; at first it was slight, and then increased in frequency and violence. Six months ago the patient again consulted Dr. Tripier, who found multiple tumours in both breasts, especially in the left, and of which the patient was not aware. Enlarged glands in both arm-pits; medical treatment produced no effect. The pain, which up to that time existed only in the left breast, appeared in the right as well. Four months ago the pain appeared in the muscles supplied by the brachial plexuses, more violent on the left side. The patient entered the hospital.

Present state.—Left breast more hypertrophied than the right; of normal appearance. On palpation in the supero-external region of both breasts, hard tumours are found. These cannot be isolated from the gland, with which they form masses of various sizes; the largest are the size of a walnut, and movable. The breasts, and especially the left one, are painful on pressure.

Operation performed on March 7th.—Partial amputation of the gland containing the largest tumours; deep suture of the gland, as has already been described. Histological examination of the portion removed, showed it to be a case of multiple fibroma, accompanied by chronic mastitis. The sequel of the operation was excellent; the bandage was removed the 17th of March. An effusion of blood was in the left breast, which slowly underwent absorption; it still existed the twenty-fifth day after the patient had left the hospital. Pain disappeared in the right breast, but was still quite sharp in the left, probably on account of the effusion.

The patient came back (May 20th) complaining of violent pains in

the left breast; the effusion had completely gone. As the patient was excessively nervous and a hypochondriac, an anti-nervous treatment was prescribed. The pains disappeared slowly; they were still slight on June 12th, when the patient left the hospital. The result of the operation from the æsthetic point of view, was excellent; the breasts were hard and well raised, and their shape is better than before the operation. The nodules have disappeared in the right breast; some still persist in the left.

CASE II.—Rose G., aged thirty-six; menstruated at thirteen. Married; has one child which she could not nurse; has had one accidental abortion. From the time that the patient had her first menstruation, she had experienced, at each period, quite sharp pains in both breasts, which became large and lumpy. Three months ago, without any appreciable reason, the patient found a tumour in the left breast the size of a walnut, attended with pain, and enlarging so rapidly that she was obliged to enter the hospital. The tumour was about the size of a mandarin, hard, movable, spontaneously painful—more so at the time of her menses, and also produced by pressure. No enlarged glands. In the other breast a tumour of the same nature was found. Removal of the tumour of the left breast, consisting of a cyst. All around this cyst, and invading the entire gland, small cysts and fibrous nuclei were found, so that we were obliged to entirely extirpate the left breast.

The patient returned the following year, suffering exceedingly from the right breast, in which multiple tumours of various sizes were discovered. The largest of these tumours—the size of a turkey's egg—was irregular in shape, resistant, and its surface was covered with lumps, one being much larger than the others. The tumour occupied the external side of the breast, and extended nearly to the nipple. In the rest of the gland small, indurated points are found, feeling like grains of lead.

Operation performed June 5th, 1888.—According to Tripier's method, incision on the external side, removal of a quarter of the gland, deep suture, &c. The sequel of the operation was excellent; the examination of the tumour has already been given. The patient left cured. The hard nuclei, which existed in the other parts of the gland, were found to be slowly disappearing.

From time to time I saw the patient, who at the present time is undergoing treatment for metritis, as she suffered again from some pain in the right breast. This has completely disappeared since the treatment has been commenced.

CASE III.—Marie G., aged twenty-seven; entered the hospital Oct. 28th, 1889. Menstruated at fourteen. At the age of fifteen she noticed by chance that she had a small tumour the size of a walnut in the external side of the right breast; it was painless, movable, and underwent no

changes at the epoch of the menses. After ten years' duration the tumour is the same; as medical treatment had no effect, an operation was performed in Dec., 1886, according to Tripiér's procedure. The drains were removed on the eighth day, and the patient cured on the twelfth. She continued to come from time to time during two months, complaining of some slight pain in the shoulder and right breast, but this rapidly ceased. I saw the patient on April 26th, 1890. She was married in Aug., 1887; became a mother in June, 1888, and nursed her child for fifteen months on both breasts. The breast operated on furnished as much milk as the other one, and has given place to no painful or other symptoms. The breast operated on presents no difference from the other one. The skin is movable, and the only trace of the operation is a line two centimetres long, which is slowly diminishing; the shape of the breast is perfect, and absolutely resembles the other. The right breast, which before the operation descended more than the left one, is to-day on the same level with it.

CASE IV.—Claudine G., aged thirty; entered July 12, 1887. Menstruated at sixteen; irregularly up to the age of twenty. Married; one child, which she did not nurse. The *début* of the present affection dates back seven years; commenced by a painful gland in the armpit. Some time before this the patient received a blow on the breast. The pain in the armpit lasted until the spring; at this time the patient had attacks of shooting pains in the left breast several times during the day. At the same time she perceived that there was an indurated spot in the upper part of the breast; this tumour, not quite so large as a silver half dollar, was very sensitive on pressure. The patient used every possible and imaginable means to suppress it without obtaining any great relief. She entered the hospital for an operation. The tumour has remained stationary, and is movable under the skin.

Operation performed July 15.—Following Tripiér's procedure, the gland, which had, macroscopically, a normal appearance, was cut down upon; nevertheless, on section it has a sensation of resistance greater than the normal, and the glandular *cul-de-sacs* project; the connective tissue seems thickened.

July 20.—The pain is considerably better, and diminished progressively.

July 24.—It had ceased, and the patient was nearly cured, only the course of the drain is not yet closed. The shape of the breast is as perfect as possible.

CASE V.—Dauphiné N., aged thirty-two; entered April 30, 1890. Menstruated at thirteen regularly. At about the age of fifteen, at the epoch of the menses, the patient noticed that a few drops of bloody liquid flowed from the right breast, without there existing either tumour or pain; in the interval of the menses all disappeared. Married at twenty-

seven; first gestation twenty-eight, and a second one year later. The patient nursed her first child entirely, a little more with the left than with the right breast; because, she tells us, the nipple of the left organ was longer than the other. A year and a half ago she sustained a blow on the right breast; two weeks after this she noticed a tumour the size of a hazel-nut situated in the internal region of the areola; it was entirely painless, and slowly increased in size. Four months ago the discharge from the breast, which always appeared at the epoch of the menses, ceased, and the tumour rapidly enlarged. At the time of the examination at the hospital the left breast was a little larger than the right; the nipple was retracted a little, but on stretching the skin it was made to project. On palpation, a crescent-shaped tumour was found in the internal region of the breast, extending above and below the nipple, which was compressed in its concavity; it appears to surround the galactophorous canals. This large tumour is hard and lumpy; no adhesions. By pressure a drop of serous liquid was expelled from the nipple. No enlarged glands; no pain.

Operation performed the 6th of May.—A transverse incision 12 centimetres long is made in the submammary furrow. The tumour is laid open to view, and enucleation attempted, but is unsuccessful, and a careful dissection of the part becomes necessary; an accidental incision made in the tumour caused the escape of a brown-coloured liquid. This proved that we were in the presence of a cyst, and a slow and difficult dissection was made. It was formed by the galactophorous canals, which have sent forth ramifications in all directions. Under the nipple the cyst was so superficial that the knife was only a millimetre from the skin. We were obliged to go as far as 6 centimetres above the nipple. When the cyst was removed the wound was washed with carbolised water; a deep drain was introduced by a counter-opening made in the axillary line. Deep suture (with catgut) of the shell which had enveloped the cyst. Superficial drainage; section of the skin.

En résumé, this was the same procedure as for a removal of a segment of the gland. The patient left May 23, completely cured. No apparent trace of the operation; the breast operated on, which descended lower than the other organ, is now on the same level; the nipple is not retracted.

CASE VI.—Marie D., aged forty-five; hereditary tubercular antecedents. Married twice; has two children. The last labour was in 1880, followed by an abscess of the breast. In May, 1887, she found a tumour the size of a large walnut in her right breast, causing sharp pains extending down the arm of the affected side. On examination of the region a small tumour, quite movable in the deep parts and under the skin, was found. It was situated in the lower part of the breast; above quite an extensive and diffused induration of the gland was discovered.

In the corresponding arm-pit two or three large and indurated glands are found, and which escape from the finger when pressed. Nothing in the sub-clavicular region. The last-mentioned symptoms are all attributed to the abscess of the breast at the last labour.

Diagnosis.—Adenoid tumour of the breast. The treatment consisted of iodide of potassium internally, and a salve composed of the iodide and belladonna, *loco dolenti*; and as no result was obtained, an operation was decided upon. Prof. Tripier made an incision over the growth, and profited by the zone of the areola for hiding it. The incision was curved, followed in the boundary line between the skin and areola. When the cellular tissue had been cut through, the incision became nearly transverse; a layer of glandular tissue is divided, and the tumour was thus brought into view and easily enucleated. The cavity thus formed was drained, and the glandular tissue forming the anterior wall was sutured with catgut. The superficial tissues were sutured by means of metallic wire, after sub-cutaneous drainage had been established. Healed by first intention.

The patient left cured, with a perfectly-formed breast, and it is even less flabby and pendant than the healthy organ. The patient was seen last June. The cicatrix is hardly to be seen, and is reduced to the proportions of a simple scratch; both breasts are exactly the same in shape. The histological examination of the piece which was removed showed it to be a case of typical fibroma, containing numerous cystic dilatations and spaces.

Chronic inflammation of the breast, developing under the influence of menstruation or the puerperal condition, may end in fibroma or multiple cysts. Traumatism, by producing localised mastitis, can thus produce fibroma or solitary cysts; *à fortiori*, when the preceding causes exist. The affection, if taken at the outset, can be greatly improved and even cured by a local and general medical treatment, applied both at the same time. If it remains without effect, surgical treatment is necessary—by enucleation if it be possible, but more frequently, partial amputation of the breast. Prof. L. Tripier has improved the procedure by employing in every case two drainage-systems and two plans of sutures—a sub-mammary drainage and deep suture of the gland; a sub-cutaneous drainage, and a superficial or cutaneous suture. This method gives excellent results as to the shape of the breast—all the more so as in certain cases it is easy to hide the line of incision either in the sub-mammary fold, or in the line of junction of the areola with the skin.

WORKS REFERRED TO.

[The numbers correspond to those in the text.]

- ¹ "Tumeurs bénignes du Sein."
- ² G. B. Schmidt. "Beiträge zur klinischen Chirurgie."
- ³ "Pathologie Chirurgical Speciale."
- ⁴ Idem.
- ⁵ "Comptes rendus de la Société de Chirurgie." 1888.
- ⁶ "Cliniques Chirurgicales."
- ⁷ "Die Geschwülste der Brustdrüsen."
- ⁸ "Cliniques Chirurgicales."
- ⁹ Mollière. Op. cit.

THE TREATMENT OF DIPHTHERIA BY THE INJECTION OF THE ERYSIPELAS ALBUMOSE.

DR. G. A. BANNATYNE (*Glasgow Medical Journal*, Sept. 1891), struck by a report of cases of diphtheria successfully treated by Dr. Babchinski, of Kieff, by the inoculation of erysipelas virus, has tried a short but important series of experiments on guinea-pigs and rabbits. He draws the following conclusions:—1. That even although the diphtheria had a good hold of the animal's system, yet by injecting the erysipelas albumose it could be arrested. This was true, either when the symptoms were only beginning to show themselves, as well as when they were well marked and severe. The albumose acted apparently by killing the bacilli—at least it rendered the surrounding ground unsuitable to their development, and thus prevented their elaboration of chemical poisons. 2. It produces immunity, of how long duration he cannot say, as far more elaborate experiments are required to determine this point. 3. The dose varies from a $\frac{1}{5000}$ to $\frac{1}{750}$. If one dose is not sufficient, and in a few cases it will be sufficient, a second should be given, slightly larger than the first, and so on until no reaction is got after the injection. The first dose, he held, should not be more than $\frac{1}{5000}$ at most.

DEATH FROM ETHER.

A DEATH from ether is recorded (*Medical News*, Philadelphia, LIX.-4, page 102) by Dr. Charlotte Brown. The patient suffered from fibroid tumours of the uterus, and was twice operated on with success under ether. After severe hæmorrhage, a third operation was recommended, and ether was again administered. Death occurred whilst the wire of the ecraseur was being slipped round the tumour. It is recorded that after the heart ceased beating there were a few weak efforts at respiration.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Local Government Board Report on the Influenza Epidemic of 1889-90. By DR. PARSONS. With an Introduction by the Medical Officer of the Local Government Board. London: Printed for Her Majesty's Stationery Office by Eyre & Spottiswoode. 1891. Pp. 324.

THE literature of Influenza has reached enormous dimensions. First, when the malady was a novelty, came the stage in which typical cases of the disease were described. Then gradually came the period in which all the vagaries of the disease were recorded. We have read of the effects of Influenza on every organ in the body; of motor, secretory, sensory, and psychical results of the disease; and now the time has come to review the disease as a whole, to consider it with reference not only to one country but to the world, and, at least, to make the attempt to settle some of those problems connected with it which are at once so perplexing and so important—such as, the cause of its outbreak, its mode of spreading from place to place, the question whether it spreads directly from the sick to the healthy or not, means of prophylaxis, and so forth.

It is, therefore, with great pleasure that we welcome Dr. Parsons' Report as an attempt to carry out these investigations. It is the most important work which has yet appeared on Influenza as a whole. It is based on inquiries and investigations made in every part of the world, but especially in the British Islands. A printed list of questions relating to Influenza was sent to all the medical officers of health in England and Wales, communications were addressed to railway companies and other public bodies, much information was obtained from private sources. All this material has been most carefully worked up by Dr. Parsons.

The first part of the work is historical and geographical. Former epidemics are briefly referred to. Then the epidemic of 1889-90 is described at length. Influenza outbreaks were noted in May, 1889, in Greenland, Athbasca, and Bokhara. After that nothing was heard about it until October 15th, when it was reported as

prevailing at Tomsk, and by October 27th it had reached St. Petersburg; its progress through Europe and the other continents is well known; and occasional outbreaks in various places have not ceased to occur.

After detailed accounts of the epidemic in every part of the world, Dr. Parsons' general conclusions are as follows:—

“1. The general course of the epidemic in the northern hemisphere has been from east to west (*i.e.*, in a direction contrary to the prevailing surface wind) and from north to south. In the southern hemisphere its course has been from south to north.

“2. It would appear to have followed, on the whole, the lines of human intercourse, the capitals and important towns in each country being attacked before the provincial towns and rural districts.

“3. The epidemic has not travelled faster than human beings, parcels, or letters could travel.

“4. The disease has prevailed independently of season, climate, and weather. Summer and winter, heat and cold, drought and moisture, have no effect on it.

“5. The epidemic at its commencement has in most cases been recorded to have been preceded for a few days or weeks by a succession of scattered cases, the number rapidly multiplying into an epidemic. No unquestionable instance is recorded of the epidemic having commenced suddenly with a large number of simultaneous cases in a place previously free from the disease.

“6. The cases at the commencement of an epidemic have often been described as mild. Later on, the cases have manifested themselves more severe, and relapses and dangerous complications have occurred. The mortality during the prevalence of the epidemic has been largely in excess of the average, being swollen not only by the deaths directly attributed to Influenza, but also by a great increase in those from other diseases, especially of the lungs and heart.

“7. The progress of the epidemic over the globe, taking Russia as its starting point, has been more rapid than that of previous epidemics.”

There is a very full account of the symptoms and clinical history of Influenza, illustrated by tables referring to outbreaks in various localities and institutions. The most usual length of the stage of incubation was from two to three days, but there are many exceptions to this average. For clinical purposes the disease is divided into three groups:—

“I. Nervous, the prevalent form in the epidemic of 1889–90, characterised by great depression, and severe pains in the head, spinal region, and muscles.

- “ II. Catarrhal, marked by coryza, and tendency to congestion of the respiratory mucous tract.
- “ III. Gastric, especially noticed in children, and marked by vomiting, diarrhœa, and other symptoms of gastro-intestinal disturbance.”

With regard to the bacteriology of Influenza, Dr. Parsons believes that the germ of this disease, if there be such, has not yet been discovered.

The most interesting chapter in the book is that on ætiology, in which the mode of propagation of the disease is discussed. It is here that the wealth of material at Dr. Parsons' command is most manifest: there are reports from town and country districts, from railways and fishermen, from lighthouse-keepers, and from London Hospitals—in fact, from all sorts and conditions of people. The hypotheses which have been or might be put forward as to the mode of propagation of the disease are thus classified:—

“ A. Atmospheric:—

- “ 1. Climatic conditions, weather.
- “ 2. Aerial poison, miasm, malaria.

“ B. Communicable:—

- “ 1. Direct, from person to person, or by fomites.
- “ 2. Mediate, the poison derived from human bodies being capable of multiplying in a suitable medium outside the body, like cholera or enteric fever.

“ C. Evolved from some commonly present disease under unusual (? atmospheric) conditions.

“ D. Zoogenous:—

- “ 1. Derived from equine ‘influenza.’
- “ 2. Carried by migratory birds.

“ E. Dietetic:—

- “ Caused by eating Russian oats.”

All these theories are discussed at considerable length, the facts on which they are based, and the arguments for and against them being clearly given. We cannot attempt to follow Dr. Parsons through these arguments. They occupy 38 pages, and are well worth reading in the original. His conclusions, however, are most important:—

“ I am of opinion,” he says, “ that the epidemic has been propagated mainly, perhaps entirely, by human intercourse; though not in every case necessarily from a person suffering from the disease. I see no sufficient ground for believing in that world-wide spread by atmospheric agencies which has been so generally assumed. I do not say that the

contagium once imported into a locality may not propagate itself outside the human body in such media as damp ground or air contaminated with organic exhalations, but the fact of adjoining communities suffering at different dates seems opposed to the poison travelling far through the air. I do not find sufficient evidence that the recent epidemic has anywhere commenced suddenly with a large number of simultaneous cases, unpreceded by any previous ones, and I think that the rapidity with which influenza develops into an epidemic may be accounted for by its short period of incubation, by the comparatively general susceptibility to the disease, and by the existence of numerous slight and unrecognised cases. I do not, however, wish to exclude the possibility that the specific germ of the disease may multiply in appropriate media—*e.g.*, in damp, organically-polluted, confined air—outside the human body.”

Most of the rest of the Report is taken up with abstracts of reports from medical officers of health of counties and districts, from railways, institutions, the navy, &c., &c. There is a post-script on the outbreaks of the disease in England and elsewhere in the spring and early summer of 1891.

With regard to prophylaxis, considering the number of those attacked, and the general mildness and low mortality of the disease, Dr. Parsons does not think any general attempt to cut short an epidemic by isolation of those affected would be possible or even advisable. In some cases, however, as in the case of those who from their age or infirmity would be very bad subjects for influenza, isolation has been practised with success. We are again reminded that the disease falls most heavily on those who are worn out in mind or body, and that to fight against the disease is a serious mistake.

In conclusion, we must congratulate Dr. Parsons most heartily on his Report. It must be looked on as the classical Text-book of Influenza.

Clinical Lectures on Surgical Subjects. By CHRISTOPHER HEATH, Holme Professor of Clinical Surgery in University College, London. London: J. & A. Churchill. 1891. Fcap. 8vo. Pp. 326.

THESE Lectures were delivered from time to time in University College, and are here reprinted from the various medical journals in which they originally appeared. They are dedicated to Mr. Erichsen, Mr. Heath's predecessor in the Chair of Clinical Sur-

gery, and are ushered in with the modest hope that "they may prove of interest to those who heard them." We think they will prove of interest to a wider circle, for, while retaining the special form of clinical teaching, they show everywhere the solidity and grasp of a surgeon of wide experience and of originality of thought. Among the subjects treated we may refer to an excellent account of "Sacro-iliac Disease," "On Cases of Sarcoma," "On Common Diseases of the Breast," "On Tumours of the Scrotum," and "On Aneurysm," to give our readers an idea of the scope and character of the volume. The work is convenient in size, is well and clearly printed, and is just the sort of book that can be conveniently taken up in an idle moment in the assurance that some practical hint will be found in it which will be worth remembering.

Le Végétarisme et le Régime Végétarien rationnel : Dogmatisme, Histoire, Pratique. Par le DR. BONNEJOY (du Vexin); de plusieurs Sociétés savantes, Médecin de l'Hospice de Chars (Seine et Oise), Membre de la Société de l'Archæologie Lorraine, &c. Précédé d'une introduction par le DR. DUJARDIN-BEAUMETZ, de l'Académie de Médecine, Médecin de l'Hôpital Cochin, Membre du Conseil d'Hygiène de la Seine, &c. Paris: Baillière et Fils. 1891. 12mo. Pp. 341.

ALTHOUGH Dr. Dujardin-Beaumetz looms largely on the title-page of this systematic work on Vegetarianism, his material contribution is small, and his support of Dr. Bonnejoy's principles goes but a little way. His preface occupies two pages and a half, in which he declares himself a vegetarian only for therapeutical purposes, confesses that he cannot agree with the vegetarians in their views of the good effect produced upon the intellectual and moral faculties by exclusive vegetable-eating, and opines that a man may be virtuous even though he eats meat. Himself a vegetarian on account of his health, he had laid down in his lectures that vegetarianism applied to a healthy subject, in the European climate, is a mistake; but this, our author maintains, was merely a concession to popular prejudice.^a

M. Bonnejoy's vegetarian trumpet gives no uncertain sound.

^a In another passage of these lectures (delivered last year) he makes a statement which will surprise, and perhaps amuse, "old Indians":—"Nous voyons l'Anglais, mangeur de viande . . . quand il habite son pays, devenir malade quand il habite les zones torrides comme l'Inde, où il est forcé de devenir alors végétarien."

This volume is the ninth which he has given to the world on the subject to which he has devoted himself, and in it will be found abundant evidence of his industry and enthusiasm. Let us state his thesis in his own words:—

“I shall prove in the course of this work that ‘animal food is not the best form of aliment,’ that, on the contrary, it is, physically, the source of degenerations and of innumerable diseases which oppress necrophagists. Morally, ‘alimentary murder’^a is, as proved by abundant evidence, the source, in man, of every vice, of hereditary insanity, of degeneracies—alcoholic, morphinic, &c.—whose rising tide justly terrifies the thinker and the moralist, powerless to arrest them. Vegetarianism, a doctrine essentially favourable to the moral development of man and to the healthy play of his natural faculties, is altogether opposed to those disastrous habits, direct consequences of the exaggerated necrophagy of the day” (p. 3).

Our author deplores the neglect with which vegetarianism is treated in his own country, where its “disciples are isolated and sprinkled amongst the learned societies and the liberal professions.” “An unreflecting and hide-bound necrophagic prejudice” prevails in France. Elsewhere and especially in England—as we learn with some surprise—the cause is winning all along the line. Here the reform has already told upon the physical aspect of the people: “Chez eux, on ne rencontre plus ce type bouffi par l’absorption outrée des ‘beef-steack’ qu’on y remarquait autrefois.” Drunkenness also is diminished, being incompatible with vegetarianism. In Paris the visitor to the cold baths on the banks of the Seine will see to what “the Apollonian type of man” is come, in consequence of growing necrophagy; and there it will be noticed that deviation from the Grecian type of beauty is more marked in the wealthy classes, which are necrophagous to excess, than in the poor people, vegetarian by necessity. Physicians, and dressmakers, know to what the vegetarian norm, represented by the Venus of Milo, has been degraded in the modern necrophagous female of Paris. To the same cause our author attributes the low size of the Parisian population and the lowering of the standard for conscripts. *Post hoc ergo propter hoc* is the fallacy that doth so easily beset the physician.

There are vegetarians from sentiment, as well as vegetarians from conviction that necrophagy is injurious to the necrophagist.

^a This impression is childish. The essential element of “murder” is *malice*, as Whately long ago pointed out in commenting on the absurdity of styling suicide “self-murder.”

The former are actuated by love of the animal that is eaten rather than by regard for the eaters. Such was Ménard, who published "*L'Ami des Bêtes*" in 1814. He tells us that man, who ought to treat the lower animals as a paternal king treats his people, is their tyrant, their murderer, their devourer; that he slays without a shudder, and so on. The result is debasement, physical and moral. A flesh-eater is necessarily stupid and ferocious; while one who feeds on milk, on vegetables, and fruits, "*doit être délicat, spirituel et sensible.*" Such was our own Dr. Anna Kingsford, who enjoyed the right of private *entrée* to the columns of our grandmotherly contemporary, the *Spectator*. She, Dr. Bonnejoy tells us, carried her sentiment so far that she would wear nothing made of leather. A Buddhist by conviction, she believed in metempsychosis, and, firmly persuaded that she had been a guinea-pig in her previous existence, she always carried about with her, in a bag specially adapted to the purpose, a specimen of this intelligent rodent. Mindful of her sufferings at the hands of physiological experimentalists in her former life, she founded the Anti-vivisectionist League. If sentimentalists of this type were pervious to reason, they would see that the sum of animal happiness is enormously increased by "necrophagy." It is better, even from the ovine point of view, that twenty sheep should lead happy lives terminated by hæmorrhage, than that five should die of old age.^a

The progress of the cause in England fills Dr. Bonnejoy with delight. In 1740, Dr. Cheyne published an essay in London, in which he advocated vegetarianism. He declared that the slaughter of animals for food implied a heart of stone, a barbarous and ferocious disposition, and that it is impossible to distinguish, logically or morally, between eating the flesh of the lower animals and cannibalism. He lived himself on milk, tea, coffee, bread, butter, salad, cheese, fruits, and seeds, potatoes, turnips, and carrots. He attached great importance to the therapeutical use of the system, asserting that, in his experience, it had rarely failed to be beneficial in cases of gout, rheumatism, carcinoma, scrofulous affections, neuralgic colic, epilepsy, hysteria, melancholia, tuberculosis, and in the later stages of every chronic disease. Dr. Bonnejoy goes much further than this, giving a list of thirty-five diseases or morbid conditions relieved by the diet he recommends.

^a "There is much talk of the misery which we cause to the brute creation; but they are recompensed by existence. If they were not useful to man, and therefore protected by him, they would not be nearly so numerous." --DR. JOHNSON.

In spite, however, of Dr. Cheyne's authority, his countrymen continued to wallow in necrophagy for 150 years—"se sont abandonnés à une nécrophagie vraiment outrée." Now, "ils sont revenus de leur erreur, et aujourd'hui donnent l'exemple consolant de la population la plus végétarienne de l'Europe." In 1842, Gleizès, one of the great apostles of vegetarianism, shook his head in sadness over the English. "Unhappy people," he said, "meat is destroying them. See them, like frozen serpents, seeking sunshine everywhere out of their own island! But 'tis in vain, they carry the poison with them. It is another warmth, another light, they need; and their eyes, confused by crime, are incapable of perceiving it." Four years after the death of Gleizès the Vegetarian Society of Manchester was founded, whose motto is V.E.M.—symbolical of "Vegetables, Eggs, Milk." It enjoys a revenue of £2,000 a year, maintains a journal—*The Vegetarian Messenger*—and propagates its doctrines also by lectures and pamphlets. It has a branch in America, and 18 affiliated societies in England. The reproach of "nécrophagie vraiment outrée" is wiped out. Of all the whimsicalities which (mixed with the fruits of learning, research, and some knowledge of dietetics) this book contains, perhaps the most whimsical^a is the explanation of Ovid's mysterious exile. Ovid was a convinced vegetarian; and, in the 15th of the "Metamorphoses," he puts his own views into the mouth of Pythagoras. This amounted to censure of the necrophagic habits of the court. Augustus felt the palpable hit, was deeply offended, disgraced and banished the vegetarian poet. Of course he did not put forward the real reason for his decree, and it has hitherto been wrapped in obscurity. The truth is now revealed. Pythagoras's objurgations against the "horrible crime" of alimentary murder were taken by Augustus "pour une satire déplacée des mœurs nécrophagiques de lui-même et de son entourage."

It is difficult to treat vegetarianism, or its twin craze teetotalism, with the seriousness which the sincerity and earnestness of the advocates of these half-truths seem to deserve. So long as they

^a Perhaps we should give the palm to the argument in favour of vegetarianism derived from the family disagreements in Adam's household. "Cain," says Dr. Bonnejoy, "the first murderer of animals, was also the murderer of his brother." Theologians have hitherto, following Moses, held that Cain's victim was the animal-murderer, and Cain himself a pronounced vegetarian. The skins, too, wherewith our first parents clothed themselves before Cain and Abel's time, seem to exonerate the latter from priority in "animal murder."

fight for moderation in the use of animal food, or temperance in the use of alcohol, they will have the hearty support of all of us; but we cannot follow them down the descent from enthusiasm to fanaticism. They injure their own cause by the extravagance of their arguments and assertions. When the temperance lecturer maintains that the wine that made glad the heart of man at the Cana marriage was some unfermented nastiness, or the vegetarian traces most of the diseases in the College of Physicians' list to beef and mutton, he discredits his cause, and weakens the effect of his advocacy of moderation. Neither can expect to convert mankind. Every human being eats fish, flesh, or fowl, when he can get it; and every human tribe, on first emergence from savagery, has proceeded "to mix a drop of drink"—to invent an alcoholic liquor. The teetotaler will make a few more converts than the vegetarian, because the effects of alcoholic excess are more real and obvious than those of eating too much meat; but the task of persuading civilised mankind to live on vegetables and water—even eked out with eggs and milk—is hopeless.

Modern Abdominal Surgery. The Bradshaw Lecture delivered at the Royal College of Surgeons of England, December 18, 1890. With an Appendix on the Castration of Women. By SIR SPENCER WELLS, Bart., F.R.C.S.; Surgeon to the Queen's Household. London: J. & A. Churchill. 1891. Pp. 51.

THIS Lecture, which now appears in pamphlet form, from the able and authoritative pen of Sir J. Spencer Wells, was designed evidently with a twofold object. First, to impress on his hearers the truly marvellous strides which abdominal surgery has made in the last fifty years; and, secondly, to call attention, as emphatically as he can, to the abuse of abdominal operations, especially with regard to oöphorectomy, and to repeat the warning to which he gave utterance in 1882, but which the practice of later years has shown to have been overlooked or neglected, but none the less needed. He then said, and he again repeats:—"Though I accept the principle, I see that the operation has a very limited application, and is so open to abuse that its introduction in mental and neurotic cases is only to be thought of after long trials of other tentative measures, and the deliberate sanction of experienced practitioners. . . . Except in cases where bleeding fibroids may call for the extirpation of the healthy ovaries, we might at

least require some evidence of the ovaries being diseased before consenting to their extirpation in the hope of curing any of those vague nervous disorders to which women are so subject, and which are often dispelled by moral treatment, or social changes, often benefited by measures which can have but little effect except on the imagination, often return after cure in any way, and leave the hopeless beings the prey of unscrupulous or illogically enthusiastic experimenters."

Nothing kills like ridicule; and we have a fine specimen of it in the closing page of the Appendix, which is a reprint from an article contributed to the *American Journal of the Medical Sciences* in 1836 by Sir Spencer Wells:—

"If we hold the mirror up to Nature," he says, "only changing the sex of the actors, the spectacle is not flattering. Fancy the reflected picture of a coterie of the Marthas of the profession in conclave, promulgating the doctrine that most of the unmanageable maladies of men were to be traced to some morbid change in their genitals, founding societies for the discussion of them, and hospitals for the cure of them; one of them sitting in her consultation chair, with her little stove by her side and her irons all hot, searing every man as he passed before her; another gravely proposing to bring on the millennium by snuffing out the reproductive powers of all fools, lunatics, and criminals; a third getting up and declaring that she found at least seven or eight of every ten men in her ward with some condition of his appendages which would prove to be incurable without surgical treatment; and a bevy of the younger disciples crowding around the confabulatory table with oblations of soup-platefuls of the said appendages; if, too, we saw, in this magic mirror, ignorant boys being castrated almost impromptu . . . should we not, to our shame, see ourselves as others see us?"

In the Address itself, which deals for the most part with the advances made during the past half century in abdominal surgery, we find that Sir Spencer Wells is still an advocate for the use of bichloride of methylene in preference to all other anæsthetics. He believes its employment will free surgeons from much unnecessary anxiety. Also he is not an advocate for either flushing out or for draining the abdominal cavity after operation. He has only twice *flushed* or washed out the peritoneal cavity with warm water, and in both cases he regrets having done so. "In a large majority of cases of removal of abdominal tumours, it simply adds to the amount of sponging required at the expense of more or less shock or depressing effect, and leaves the patient no better,

perhaps worse, than after careful sponging with soft, moist sponges."

These are only some of the points touched upon in an Address of great clearness and interest. We would strongly advise all surgeons, and, we might add, especially gynæcologists, to read this Address, and to lay to heart the lessons taught by one who has a right to speak with authority on the subject with which he deals.

Army Medical Department Report for the Year 1889, with Appendix.
Vol. XXXI. London: 1891.

THIS Report for 1889 has been, as usual, born out of due time in the middle of 1891. Remonstrance is useless, and we must accept what we can get. It is not easy to feel interested in statistics of by-gone years, but we may briefly notice a few points. We observe that some of the cases and papers in the Appendix belong, very properly, to periods subsequent to that of the Report itself.

In 1889, the annual average strength of the British Army serving at home and abroad (exclusive of the Royal Malta Artillery, the West India Regiment, and the Gun Lascars at Ceylon and Hong Kong) was 198,448 warrant-officers, non-commissioned officers, and men, or with detached individuals included, 199,715. The admission-rate of this force was 1,006·9, and the mortality 9·17 per mille.^a The inefficiency due to sickness is a good test of the healthiness of a station, and we have taken out of the Tables in pp. 2 and 3 the ratios per mille for some of the worst localities, arranged in the order of demerit.^b The figures in parentheses are the corresponding averages for the decennium 1879–88. Thus, the general average of ineffectiveness from sickness for the whole army being 58·14 per 1,000 (55·19), and for the United Kingdom, 41·48 (46·34), the ratios for certain stations were as follows:—Straits Settlements, 99·84 (49·49); India, 87·36 (69·51); Mauritius, 86·43 (85·39); Ceylon, 66·80 (63·54); Egypt, 60·45 (74·92); Cyprus, 56·53 (44·08); S. Africa and St. Helena, 52·64 (52·93); West Indies, 52·49 (46·62). The amount of this "constant inefficiency" due to venereal affections is worth notice in passing. Simple venereal ulcer cost the country the

^a This little army costs £18,000,000, about £160 per man. The German army of 2,000,000 costs less than £27,000,000.

^b The best station is Bermuda, which was lately converted, temporarily, into a military penal settlement. Its ratio was 24·09 (34·59).

services of 163·57 men in 1889—130·03 in England and Wales alone. Secondary syphilis laid up in the United Kingdom alone, 332·63 men; gonorrhœa, 629·95. "Including all forms of venereal disease," the number constantly sick in the whole army was 1,710·10—about two battalions.

The primary examination of recruits appears, from some cause or other, to be defective. Of a total of 53,904 recruits inspected, only 31,455—583·54 per 1,000—were found fit for service. There is, however, some improvement in this respect upon the inspections of the previous year. The ratio of secondary rejections decreased for England and Wales by 56·74 per 1,000, increased for Scottish recruits by 2·52, and for Irish by 5·26. As to nationalities of recruits, England and Wales supplied 784 per 1,000; Ireland, 113; Scotland, 88. ("The Celts are gone with a vengeance.") We observe that the proportion of Irish recruits rejected on final examination was lower than that for the other sections of the United Kingdom. The physique of recruits is not improving—4,768 out of 10,000 were between 18 and 19 years of age; 394 were "boys under 17." The largest proportion, about one-fifth, were between 5 ft. 4 in. and 5 ft. 5 in. in height, 2,041 per 10,000: 284 less than in 1888. The proportion between 63 and 64 inches was 556 higher than in that year: 378 per 10,000 were 63 inches; 1,063 under 64.^a

The sanitary condition of the Cyprus garrisons is, we are glad to observe, improving. There has been little fever for three years past. Much has been done in clearing, planting, sewerage, and improving water-supply. The average strength in 1889 was 744. Admissions were 731·1 per mille; deaths, 1·34; discharged as unfit for service, 8·06; constantly sick, 56·53. The principal cause of admissions in this force was primary syphilis, to which 99 (133·1 per 1,000) were due. Besides these, there were 68 admissions for "simple venereal ulcer," raising the ratio for primary venereal sores to 224·5. "Including all forms of venereal disease, the total admission-rate was 371·0 per 1,000, a decline of 33·6 from the ratio in the preceding year, but an increase of 123·3 over the average ratio of the previous five years. The total ratio of constant inefficiency from venereal diseases was 34·95 for 1,000,

^a In 1890, we learn from another source, 1,195 recruits were under 17 years of age; 15,386 between 18 and 19; 23,303 under 20. 5,062 were under 64 inches in height; 4,437 measured less than 33 inches round the chest; 8,235 weighed less than 120 lbs. 1,603 "men" were discharged for misconduct.

considerably more than half the ratio of constantly sick from all causes" (p. 73). Malarial fevers caused only 35 admissions—47·0 per mille; lower than in 1888 by 25·5; lower than the quinquennial average by 66·4.

The British garrison in Egypt in 1889 averaged 3,431 warrant-officers, non-commissioned officers, and men. Admissions were 955·4 per 1,000; deaths, 12·24; discharged invalids, 14·57; constantly sick, 60·45. All these ratios were less than those of the previous year, and much less than those of the preceding sexennial period. Of the two Egyptian stations, Cairo is considerably more unhealthy than Alexandria, the improvement since 1888 in the latter station being very great. Enteric fever, more prevalent than in 1888, caused 40·5 admissions per 1,000, 4·08 deaths, and 7·01 were constantly inefficient. The percentage of mortality from this disease was 10·1—an immense improvement upon the 20·8 of the previous year, and the 28·4 of the preceding quinquennium. Dysentery appears to be diminishing in virulence, and caused 36·4 admissions per mille, and 1·46 deaths. It was most prevalent in January, August, and September. Venereal diseases gave an admission-rate of 260·5, and rendered useless 17·68 men in every thousand.

We shall notice only one of the papers appended, and that briefly. It is a report by Surgeon-Major W. F. Stevenson, Assistant-Professor at Netley, on ten cases of lung tuberculosis treated with "tuberculin" last year. In these latter days it is refreshing to find anyone saying a good word for Koch's discredited remedy, so we shall quote Mr. Stevenson's results:—

"Almost all the cases lost weight at first, but regained the loss and put on more weight when either the reaction began to decrease or the treatment was omitted for a few days. Those cases in which the reaction, as gauged by the standard of temperature only, gradually decreased, notwithstanding an increase of the dose of fluid, were those in which the improvement in the local and general symptoms was most marked and most permanent. In conclusion, so far as one can judge from so small a series of cases, the treatment of tuberculous lung disease by Koch's fluid is most hopeful for those patients in whom the disease has not yet far advanced, and useless, or detrimental, in cases where the contrary obtains; that, in fact, it is useful only under the conditions laid down by Professor Koch for its employment. Signs of lung cavity I should consider to preclude the use of 'tuberculin.' The physical signs of consolidation, dulness on percussion, and increased vocal resonance and fremitus, were the signs in which least change took place" (p. 402).

No Army Medical Report would be complete without some remarks in the usual "superior" style upon the sanitary condition of Dublin. Unhealthiness due to overcrowding and neglect of sewerage and ventilation, until an outbreak of enteric fever roused torpid attention, is attributed, at least partly, to "noxious miasmata" arising from the neighbourhoods of the barracks, which are *mostly* "situated in the congested parts of the city, inhabited by the poorest section of the population." To how many of the barracks with which Dublin is so liberally endowed does this description apply? To two or, perhaps, three; and no attempt is made to show that the men quartered—say, in Ship-street—are more unhealthy than the regiment at Beggarsbush.

A Guide to Therapeutics. By ROBERT FARQUHARSON, M.P., M.D. Fifth Edition. London: Smith, Elder, & Co. 1891. Pp. 417.

THE present edition contains references to the drugs made official in 1890. The sections on Purgatives and Narcotics and some others on general therapeutics have been enlarged. Sir Joseph Lister contributes a paragraph on Antiseptics, and Dr. Donald Macalister one on Pyrexia.

As in previous editions the excellent plan is followed of printing the physiological actions and therapeutic effects of each drug in parallel columns.

All botanical and pharmaceutical details being omitted, a larger amount of useful and practical information is condensed into the book than otherwise would have been possible, but it seems a needless fault in arrangement that articles on Disinfectants and Antiseptics, Antipyretics and Refrigerants, should be placed almost at haphazard amongst the articles on individual drugs.

The Index is carelessly drawn up, and many useful cross-references are omitted. Although Dr. Macalister's *résumé* of his views on pyrexia is mentioned in the Preface, it is entirely omitted from the Index.

Golden Rules of Surgical Practice. By a HOSPITAL SURGEON. Bristol: John Wright & Co. 1891. Pp. 54.

THIS may have proved useful to students who have neglected their hospital practice, and so have saved them from gross or dangerous errors. But the tendency of all such "guides" is to mislead; and

we can neither commend the aim of the author, nor recommend the booklet to the student as a short cut to that knowledge which every resident pupil should have learned from observation before assuming the responsibilities of his position.

History of Circumcision from the Earliest Times to the Present: Moral and Physical Reasons for its Performance. With a History of Eunuchism, Hermaphrodism, &c., and of the different Operations Practised upon the Prepuce. By P. C. REMONDINO, M.D. (Jefferson); Member of the American Medical Association, &c. Philadelphia and London: F. A. Davis. 1891.

MOUNT an author on his hobby and where will he stop? Of all writers the medical specialist is the most inveterate and irritating in his determination to ride his hobby over everybody. He respects no rule of the road; he does not give time to get out of his way; over you go the hobby-horse and its rider.

Of this type is Dr. Remondino, in whose eyes a prepuce is an abomination—an evidence of an arboreal ancestry—a begetter of all modern evils. To this flaccid flap of skin he ascribes a power of mischief that would tax the industry of Asmodeus.

Do you suffer from satyriasis? Off with the prepuce.

Are you sterile? Off with the prepuce.

Do you dread tubercle, syphilis, or epithelioma? Off with the prepuce.

Do you desire long life? Off with the prepuce.

As we read the one sole specific for all human ills, we involuntarily thought of a book lately published to advertise a quack remedy. And yet when we had finished reading the book we confessed that the few pages on congenital phimosis in Hey's Surgery, published in 1803, spoke more effectually for the operation of circumcision than Dr. Remondino's monograph, the reading of which is a great tax on the average student. It is redolent of midnight oil. Your mind is pained by the palpable effort to drag in allusions. His illustrations do not come naturally; they are far-fetched, and do not fit accurately into the text. It is not a case of bringing things new and old from a full treasury, but rather a hunt for scraps of information to furnish a feast for a hungry reader, and even then the scraps are not made into a savoury stew, but rather tossed into a beggar's bag, from which they come out cold, tasteless, saltless—an unappetising diet.

SOME RECENT PUBLICATIONS.

1. *The Diagnosis of Traumatic Lesions in the Cerebro-Spinal Axis, and the Detection of Malingering referred to this Centre.* By B. A. WATSON, M.D. Reprint from the *Medical News*, June 6, 1891. Pp. 22.
2. *The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and other Morbid Conditions.* By B. A. WATSON, M.D. Reprint from the *Journal of the American Medical Association*, July 18, 1891. Pp. 23.
3. *Studies on the Action of Dead Bacteria in the Living Body.* By T. MITCHELL PRUDDEN, M.D., and EUGENE HODENPYL, M.D. Reprint from the *New York Medical Journal*, June 6 and 20, 1891. Pp. 36.
4. *Fragments de Chirurgie Abdominale.* Par le DR. A. DELÉTREZ (Bruxelles). Première serie de cinquante Laparotomies. Bruxelles: M. & T. T'sas, Sœurs. 1891. Pp. 33.
5. *Surgical Treatment of Intussusception.* By N. SENN, M.D., Ph.D., of Chicago, &c., &c. A paper read before the Ontario Medical Association, June 3, 1891. Toronto: Printed by the J. E. Bryant Company (Limited). 1891. Pp. 61.

1 AND 2. In these two markedly iconoclastic papers Dr. Watson, as the result of experimental investigations on 141 animals, endeavours to prove the fallacy of the opinions generally held as to the remote effects of shock and concussion on the central nervous system. But in so doing he utterly fails to give, or even to attempt to give, any explanation of that anomalous train of symptoms which every surgeon has seen following after falls on the feet or back, or, most commonly perhaps, after railway accidents, where a psychical factor must undoubtedly be taken into account. The fallacy of reasoning from traumatisms artificially induced in animals during chloroform narcosis to those accidentally produced in the human subject is obvious to every one—except the author. Admitting the great harm that has been done by the writings of Mr. Erichsen on this subject, still these cases do from time to time occur; and when Dr. Watson can propound a theory based on clinical and pathological observation which will explain the muscular disturbance, amounting almost to paralysis, the alternate hot and cold waves—flushings and chills—the profuse sweating, the inequality of the pupils, exaggeration of reflexes, from which

such patients suffer—then he will be entitled to more consideration than when he merely comes before us with the bald statement—“It is not true, because *I* cannot produce the condition experimentally,” which is the sum and total of his argument.

3. In this brochure Drs. Prudden and Hodenpyl, following up the researches of Wyssokowicz, Buchner, and other observers on the action of non-pathogenic and dead bacteria in living tissues—or more properly, the reaction of living tissue to foreign invasion—have given us the results of a series of experiments with dead tubercle bacilli. The bacilli were cultivated in glycerin-pepton-bouillon and on glycerin-agar-agar. A small portion of the growth was then mixed thoroughly with distilled water and sterilised by moist heat, lasting from two and a half to four hours. Portions of this were then injected subcutaneously, or into the peritoneal sac, or directly into the circulation through one of the aural veins. Appearances microscopically identical with those present in tubercle naturally induced were found in various organs, notably in the liver, and the bacilli were still capable of being demonstrated by the ordinary stains. The authors conclude that this peculiar property of the dead germs “may be due to the specific proteid of the germ cells, which is gradually set free as the germs disintegrate at their seat of lodgment in the tissues.” They have not, however, succeeded in isolating this bacterio-protein. The following paragraphs sum up their views on this most interesting speculation:—

“It seems to us highly probable that the bacterio-protein of the tubercle bacillus, either living or dead, when set free by disintegration in the tissues is capable of furnishing that local cell stimulus which results in the formation of the various phases of these structures which we call tubercles and tubercle tissue. The slow growth of these structures would correspond to the exceptional structural invulnerability of the tubercle bacillus. These structures, which, as we have shown we can induce at will in the rabbit by the injection of dead tubercle bacilli into the blood-vessels, are morphologically absolutely typical of certain phases of miliary tubercles, even to the presence of stainable tubercle bacilli in them. . . . Miliary tubercles these structures are, but—and this is of vital importance—the animals do not acquire tuberculosis. It is not an acute infectious disease which we thus impart; there are no living germs to grow. The disease, if it is a disease, is not indefinitely progressive. The dead bacilli seem to act as foreign bodies simply, curiously stimulating, it is true, but only dead foreign bodies after all.”

If these experiments are confirmed they will raise an important point as to the ætiology of acute miliary tuberculosis.

4. A series of brief records of cases of abdominal surgery, embracing such diverse subjects as nephrectomy, cholecystectomy, and cholecystotomy; ten cases of abdominal hysterectomy, and ten of ovariectomy; seven cases of salpingectomy, two of hysteropexy, and ten of exploratory laparotomy. Short accounts of the more striking cases and comparative tables of results are given. Altogether an interesting epitome of the abdominal work of a surgeon who is not a specialist.

5. Dr. Senn is such a recognised authority on this subject that everything that comes from his pen deserves to be studied with care and attention. This address is well worthy of the author. It presents in a clear and concise form all that is known on the subject of intussusception, both natural and artificial—the latter experimentally induced in animals. Dr. Senn strenuously urges early operative interference if reduction by the rectal insufflation of hydrogen gas has proved unsuccessful. Early operation means success; delay means surgical disaster and death. We would emphasise especially his caution as to the harmful effects of purgatives in all cases where the slightest suspicion of intussusception exists: increased peristalsis means increased involution of the gut.

Massage for Beginners, or the Masseuse's "Vade Mecum." Being Simple and Easy Directions for Learning and Remembering the Different Movements in this Art. By LUCY FITCH. London: Sampson Low, Marston, & Co., Limited. Pp. 32.

SOME plain directions for massage of the different parts of the body (the fifty-eight recognised movements being described) form the chief part of the thirty-two pages; some general hints commence, and a few examination questions end, the book. It will not teach the art of massage, but may be found useful as an *aide mémoire* by those who have learned it.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—GEORGE H. KIDD, M.D., F.R.C.S.I.

General Secretary—W. THOMSON, F.R.C.S.I.

SECTION OF SURGERY.

President—H. G. CROLY, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—R. L. SWAN, F.R.C.S.I.

Friday, November 13, 1891.

The PRESIDENT in the Chair.

Inaugural Address.

The PRESIDENT read an address on sarcoma, illustrating it with cases, and showing a number of casts, pictures, and microscopic preparations bearing on the subject.

Prostatectomy for Senile Prostatic Enlargement.

MR. TOBIN having, by reference to various specimens of enlarged prostate, which he handed round, shown that it is in cases where the middle lobe is movable, and consequently removable, that retention of urine is most complete, went on to discuss the various operations used for removal of the obstruction. He condemned all those done through the urethra as coming under the head of blind surgery, and being contrary to the spirit of the present day. The method of operating which he had successfully practised he described as follows:—The bladder having been explored by the fingers through a small supra-pubic incision, and the case being one suitable for operation, a wire doubled and bent to a suitable curve is passed through the urethra into the bladder. A straight sound, arranged to receive the wire and act as an ecraseur, is then slipped up along it; but its point, instead of being passed into the

bladder, is made to impinge against the urethral obstruction. Next, the double wire lying in the bladder is opened into a loop and slipped over the enlarged lobe, and is kept embedded round its base by means of two fingers passed through the abdominal incision. While this wire is being made, by traction on it, to cut its way through the part it encircles, the inserted fingers, helped by the point of the catheter, pressed against the spot it is desired to reach, regulate its direction. The following are the advantages of this operation:—

1. As much of the gland as interferes with the escape of urine is removed, and no more.

2. Such portion of it is removed in a satisfactory manner, for the wire starts from the point where the finger defines the obstruction on one side, and cuts up to the point where the instrument does so on the other.

3. A smooth surface, sloping into the urethra, is left instead of the more or less rough one that must result from taking away the gland piecemeal with a forceps.

4. There is very little hæmorrhage.

No brilliant results are to be expected from any operation, and one should be undertaken only as a last resource. When dealing with youth we may talk of a cure, when treating the aged we may consider ourselves lucky if we succeed in making them a little better.

MR. HAMILTON said he would be glad to know if the author practised distension of the rectum and bladder. He was of opinion that these proceedings are quite unnecessary. A surgeon with a schoolboy's knowledge of anatomy can enter the bladder with safety to the peritoneum, if he keeps close to the pubes, and uses his knife with care, and his index finger with resolution and intelligence. The bladder having been opened, the removal of calculi could be easily accomplished, as well as of growths projecting from the vesical wall—such as the middle lobe as we so frequently find it. But the difficulty is much increased when we come to deal with the symmetrical enlargement of the lateral lobes. In such conditions he thought the most efficient instrument would be Volkmann's spoon. The tissue of the prostate is friable, and easily broken down.

This practice is open to two dangers—hæmorrhage and septic poisoning. The first is to be guarded against by not scraping beyond the capsule so as to wound the veins of the prostatic plexus, so frequently varicose in this condition. The second can be obviated by careful antiseptic irrigation. Mr. Tobin had alluded to the condition of the lining membrane of the bladder in such cases. He (Mr. Hamilton) had great faith in the use of *triticum repens*, but the usual medicinal doses are simply inert. To be effectual it must be taken as an ordinary drink.

MR. WHEELER said that Mr. Tobin's discourse might be considered under two heads—cases in which operation could be performed to permanently relieve, and those in which suffering could be alleviated and

life prolonged. Under the first class the obstructing growth of the prostate gland could be removed, in which surgical experience was limited. He had operated by supra pubic incision to give such permanent relief, and to remove two growths from the lateral lobes of the prostate. This patient suffered from vesical hæmorrhage, constant desire to void urine, and very contracted bladder. A supra-pubic incision revealed the growths, and also papillomata studded all over the surface of the bladder. The prostatic growths he ligatured and nipped off with a curved scissors. The ligatures came off during the operation, no hæmorrhage followed. The papillomata he rubbed off with a sponge; the bladder was drained by a soft tube through the pubic opening, one end being received into a urinal. This patient made a good recovery. A period of nine months having elapsed, he advised the pubic wound to be closed, but the patient felt so comfortable he would not consent. He had performed operations by the supra-pubic method to alleviate suffering and the trouble and irritation consequent upon enlarged prostate. In those unfit for further procedure he always used and preferred soft flexible tubes to silver instruments. Patients found them more comfortable. It was an advantage to steady the end of the tube in the bladder with some small weight; a shilling attached to the end of the tube answered well, and not only steadied it but sunk it to the lowest part of the bladder. Advanced lives were thus prolonged, and with comfort. It was by no means easy to clearly see the interior of the bladder by this operation. Artificial light was a great aid. His experience taught him that patients with the prostate enlarged passed water more effectually leaning on their hands and knees. In these cases he preferred draining the bladder above the pubes. The median operation did not afford so efficient a drain in cases of enlarged prostate, and after this operation the gland may get temporarily swollen. He did not agree with Mr. Hamilton that there was not any danger in wounding the peritoneum in contracted bladders. The operator cannot be too careful.

Mr. M'ARDLE could not see the necessity for Mr. Wheeler's elaborate but unsurgical method of supra-pubic drainage while we had the simple but perfect tubes invented by Guinard for that purpose, nor could he agree with the opinion of that gentleman as to the thorough efficiency of supra-pubic drainage. There could be no doubt in the mind of any surgeon at all acquainted with this department of surgery but that perineal drainage properly carried out is the most perfect. So valuable is it that Keyes, of New York, devised a special means of conducting the perineal tube through in supra-pubic operations of the class under discussion. Mr. M'Ardle had yet to see an instance of supra-pubic drainage which was anything like complete in all the positions a patient may assume, while he found a properly applied perineal tube to effectually drain the bladder and allow the most thorough irrigation. Mr. Hamilton spoke

of Peterson's bag as if it were one of the essentials of this operation, while as a matter of fact it is not only useless in prostatectomy, but positively harmful. Experience of its use shows that the prostatic portion of the bladder is the point raised by the rectal bag, and its elevation means a narrowing of the field of operation. The proper support is obtained by the index and middle finger of an assistant pressing on the prostate through the rectum. Mr. M'Ardle could not agree with those who said that the number of cases demanding this operation were few. His impression was that, when the value of the operation described by Mr. Tobin became apparent, the cases demanding it would be found very numerous.

SECTION OF MEDICINE.

President—J. MAGEE FINNY, M.D. ; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. MONTGOMERY, M.R.C.P.I.

Friday, Nov. 20, 1891.

The PRESIDENT in the Chair.

Recent Advances in our Knowledge of the Ætiology of Diseases of the Skin, and their bearing upon Treatment.

DR. WALTER SMITH read a paper upon modern views as to ætiology of skin diseases and their bearing upon treatment.

The illustrations brought forward were arranged under four heads:—

1. Some maladies hitherto ascribed to vague and unknown causes of internal origin are really traceable to infection usually from without. This was illustrated by the cases of—(a) erysipelas, (b) impetigo, and (c) boils and carbuncles. All forms of impetigo are contagious; hence the term “impetigo contagiosa” does not represent a distinct disease.

2. What have been commonly described as different forms or varieties of disease are often really due to the co-operation of different causes. Thus, in acne, scabies, syphilis, and eczema, the pustular phenomena that may accompany these diseases are merely secondary results, due to the accidental inoculation of pus-germs. The relation of scrofuloderma to lupus is best explained by Unna's and Leistikow's theory that scrofuloderma is an affection caused by the symbiosis of staphylococcus pyogenes aureus and bacillus tuberculosis—i.e., scrofuloderma is a case of “mixed infection.”

3. Classification of diseases of the skin is rendered more accurate—e.g., Sycosis. All forms of sycosis are parasitic, and we have (a) cocco-genous sycosis, due to staphylococcus—the so-called non-parasitic sycosis

of authors; (b) phytogenous sycosis, due to trichophyton (ringworm of the beard), the so-called parasitic sycosis of writers; (c) bacillogenous sycosis (Tommasoli).

4. We can better see the reasons for much of our management of skin affections—*e.g.*, in the cases of ringworm, boils, and impetiginous affections.

DR. M'WEENEY cordially agreed with everything which Dr. Smith had said on the bacteriological side of skin diseases. His views on the subject of "mixed infection" were quite in accordance with those held by Babes and other Continental bacteriologists. Dr. Smith was to be congratulated on the use he had made of the facts that had been most recently established with regard to the ætiology of skin disease by Continental observers.

DR. FRAZER had tried extensively the sulphide of calcium in cases of boils and anthrax, and regretted to say it had failed to give any results such as writers would lead us to expect. Two different varieties of sycosis had been long familiar to him; the third he had never observed, which may be accounted for by its extreme rarity. It is satisfactory to find microscopic investigation explain the distinct features of these two affections, heretofore classed as sycosis, and usually confounded together.

DR. J. W. MOORE, in illustration of Dr. Smith's remarks as to the treatment of furuncles and anthrax by curetting, instanced the case of a lady, aged about 60, who suffered from anthrax of the cheek some eighteen months ago. Recognising the gravity of the attack, Dr. Moore recommended surgical treatment, and accordingly Dr. Charles Ball was called in consultation. He curetted the anthrax without delay, and the beneficial effects were simply magical—temperature and pulse-rate fell quickly, and a rapid and satisfactory convalescence followed.

DR. C. F. MOORE said he could corroborate what had fallen from Dr. Smith as to the effect of using clothes which had been in contact with disease germs.

DR. TWEEDY remarked, in corroboration of Dr. Smith's statement as to the antagonistic effect of erysipelas on lupus, that he had had under his care, some years ago, in Steevens' Hospital, a girl suffering from lupus of the nose, who, while under treatment, was seized with an intercurrent attack of erysipelas which resulted in the apparent cure of the lupus. The disease subsequently, however (four years after), reappeared.

DR. SMITH briefly replied.

An Attempt to explain the Effect of Climate on the Action of Anæsthetics.

DR. C. F. MOORE said the Hyderabad Chloroform Commissions, and the interesting and able paper of Dr. H. C. Wood, read before the Berlin International Medical Congress, drew attention to the influence of climate and other agencies on the administration of chloroform by inhalation,

and to the question as to whether its effect in fatal cases took place through stoppage of the heart's action, or upon the respiration.

The purport of this paper is to show that in addition to the beneficial influence of warm climates in rendering more diffusible the chloroform vapour, and so lessening its noxious effects, as advanced by Dr. Wood, the same influence renders the functions of the lungs less paramount in warm climates than in cold, owing to the greater activity of the hepatic and cutaneous organs in those inhabiting such regions.

DR. FRAZER wished to say he had seen the first case of ether administration in Europe at the Richmond Hospital, and had given the first dose of chloroform at the same hospital to a patient of Mr. John Hamilton. He had for a long time administered it at operations, and never had a single accident, which he attributed to giving his undivided attention to the exhibition of the anæsthetic. He has, however, in private practice met two cases of serious symptoms, both fortunately ending favourably; these were not due to the anæsthetic but to syncope occurring in various individuals as the effects of the anæsthetic passed off. He had to direct attention to the fact that some persons eliminated the anæsthetic more slowly than others; in one case, for example, the vapour of ether continued to pass off for at least three days. Under the late Sir D. Corrigan he had given it to many cases of *delirium tremens*, and the result was such that the practice was abandoned, serious symptoms invariably occurring, but none ending fatally. As for continued administration in a case of tetanus, he had aided in using it for upwards of two days; the chloroform gave relief, and enabled the patient to take food, but the disease progressed and ended fatally.

DR. MOORE, in reply, agreed with Dr. Frazer's remarks as adding to the interest in the subject, and stated that he is well aware that it is only in exceptional circumstances, as in Calcutta, that ether can be had in a warm climate.

The Section then adjourned.

KNIFE-BLADE FOUND IN THE BRAIN.

DR. RICHARD SLEE records (*Medical News*, Philadelphia, LIX.-4, page 102) finding in the brain of a man, who died of septic peritonitis from a bullet wound in the abdomen, the blade of a knife, which must have been there for years. It projected into the brain for the depth of an inch.

GASTRIC ULCER AND ICE-CREAM.

DR. HIRSHEY reports (*Medical News* of Philadelphia, LIX.-6, page 155) three cases in the Clinic of Professor J. M. Da Costa, in which gastric ulcer was cured by a diet of ice-cream. The patient's craving led to its being given in the first case.

OUR EYES AND OUR INDUSTRIES.

By ARTHUR H. BENSON, M.A., F.R.C.S.I.

(Continued from page 417.)

First, concerning the seating of scholars—

Since the publication of Dr. Cohn's important work, in 1867, on "Examination of 10,060 Children's Eyes," a whole school desk industry has arisen. In the Paris Exhibition of 1867 only three different models were shown. At Vienna, in 1873, there were 47 different kinds of desks, and at Paris, in 1878, as many as 71 were exhibited, thus showing the growing importance attached to this subject.

The three main points to be attended to in seating scholars at home or in school are (following Cohn):—

(1.) The seat must be of such a height that the vertical distance from the table equals the distance of the elbow from the seat bones, plus two inches.

(2.) The chair must be pushed so close up to the table that the upper edge of the table overhangs by two inches the fore-edges of the chair.

(3.) A footstool must, if necessary, be used, so placed that the foot rests flat upon it, while the knee is bent at a right angle.

Various mechanical contrivances have been invented to prevent the child assuming a faulty position while writing. Kallman's "Face Rest" can be screwed on to the edge of any table, and is said to be effective, and not uncomfortable.

And here let me enter a strong protest against the needless overwork of young eyes. Wholly indefensible is the practice of giving, as a punishment, passages to be copied out many times over.

Concerning Light—All investigations have shown and confirmed the facts that want of light and light not coming rightly are potent causes of eye troubles. Few schoolrooms have enough light. "There can never be too much light in a school."

Javal says the school must be flooded with light, so that the darkest place in the class may have light enough on a dark day." Cohn proposes as a guide that for every five square feet of floor in the room there should be at least one square foot of glass in the window, and this proportion to be increased if the situation of the school was such as to have bad light outside from high buildings situated too close, &c.

The ideal school-room, from an oculist's point of view, should have a glass roof, but if that could not be had, the light should fall from the left side of the writer. Cohn found that the narrower the street in which the school-room was situated, the higher the opposite houses, and

the lower the story on which the lessons were given, the more numerous were the cases of short sight amongst the elementary scholars.

Artificial light should, as far as possible, resemble daylight, not, of course, direct sunlight—that is, it should be an abundant and diffuse light. The incandescent electric light probably best fulfils these requirements, being almost free from heat, and giving rise to no noxious gases by combustion. It is preferable to have a number of smaller lights rather than one bright light of corresponding power, as by this arrangement the light is more diffused and the shadows are less dense. The minimum of artificial light for reading or writing by should be the amount of light yielded by ten ordinary paraffin candles at one yard distance (= 10 metre candles).

Bad print—the type being too small and too crowded—is another important factor in the production of short sight. It is a shame the miserably printed books that are still permitted or even recommended by some school managers!

THE CAUSES OF MYOPIA are, then, for the most part avoidable, and the school managers who wilfully or through culpable ignorance permit any of these causes of short sight to exist in their schools are guilty of a grave offence against the community as well as against the individual; for not only do they increase the risk of blindness to their individual scholars, and thus throw the burden of their support upon others, but they sow the seeds of blindness in the generations yet unborn, and thus rear up for themselves a monument of misery more lasting than brass, and earn a nation's blame.

Concerning Glasses.—There is a widespread and ignorant prejudice against the use of glasses, especially prevalent amongst the employers of labour. Now all the conditions of the eye with which I have been dealing, except progressive short sight, are comparatively harmless if corrected by suitable glasses, but are productive of infinite mischief, both temporary and permanent, if not so corrected. The undue strain and effort required causes many of the most serious and destructive affections to which the eye is subject, and glasses can alone relieve the eye from this strain. Yet what do we see—thousands of those who should wear glasses—young and old, male and female—endeavouring to read, write, sew, and work with aching eyes who might with glasses perform all duties without discomfort or injury.

It should never be forgotten that the difficulty in reading, writing, &c., which comes on so commonly about middle life, is in no sense a disease, or an evidence of decay, but is the effect of a purely natural change, which takes place in all healthy eyes.

It is due to a change in the consistency of the crystalline lens, which, becoming more solid, yields less to the influence of the accommodation muscle. It is folly, therefore, to fight against or lament over the inevit-

able; and when this condition, which is called "Presbyopia," manifests itself, it should at once be relieved by wearing suitable glasses.

When will employers learn these facts, and appreciate the commercial value of spectacles for their labourers?

It is a matter of daily experience—I see it every day at the hospitals I attend—strong, able-bodied men and women, and skilled artisans, able and willing to work, who are thrown out of employment, and consequently into pauperism, not for any fault of theirs, but because of the ignorant prejudice of their employers, who will not permit the use of spectacles; forgetting, or not knowing, that their difficulty in seeing is due not to disease but to the want of glasses. Often and often, when such cases are properly fitted with glasses, and the resulting benefit recognised by the patients, still they refuse to wear spectacles, saying—"I would not be allowed to wear glasses at work; I would be dismissed if the superintendent knew I required glasses; he'd say I was going blind." In reality the man does not want glasses because he is going blind, but he is going blind for want of the glasses.

Quite recently a highly respectable looking man, aged forty-nine, came to consult me at St. Mark's Ophthalmic Hospital. He complained of not being able to see his work. He was a fitter by trade, and was employed in one of the largest foundry works in Dublin. His sight I found to be perfectly normal for all distant objects, but he could not see small things near him with accuracy. Convex glasses enabled him to see the finest things, and I advised him to wear them at his work; but, as usual, his reply was—"The inspector wouldn't let me wear them, sir, He won't let any of the men working at the bench wear glasses." I asked if the inspector himself (who was about the same age as my patient) wore glasses. "Oh, indeed, he does, sir; for he can't examine the work without them," was the reply.

I appeal to you, in the name of justice and common sense, to do what you can to end this unjust and foolish tyranny!

A well-known preacher in America was so impressed with the moral influence of diseased teeth, that he urged each member of his congregation, as a first and essential duty, to consult a competent dentist, and have their teeth properly adjusted; he rightly judged that dyspepsia, neuralgia, &c., so frequently caused by diseased teeth, interfered materially with the development of the Christian virtues, and with the exercise of those social amenities on which rested the structure of civilised communities.

This preacher acted wisely and in accordance with the laws of physiology and of ethics—*Mens sana in corpore sano*; and if all who now are debarred from employment by want of suitable glasses, or other remediable conditions, could be properly tested and relieved, what a new view of life and its problems would many of them obtain, and how much poverty and misery would be obviated.

I have no doubt but that it would be a profitable investment for employers to have their hands each year examined by a competent oculist, and their sight tested, and free permission given to all to wear glasses if required.

The perfectly normal eye requires glasses, for seeing near objects, reading, &c., at about forty-five years of age—just when the workman's experience is of value—when he is in the prime of mental and physical activity, and when he is likely to have a wife and growing family dependent on him for support, and when he has become too specialised to turn to any other work. To debar such a man from the use of spectacles would be to force him out of the artisan into the lower labouring class, and from competence into poverty—an act of gratuitous cruelty as well as folly. For “now that the workman has become skilled, steadied with age and family ties, his vision will keep good till sixty-five or seventy years of age, or beyond, if he always has the proper helps to see. I ask, then, is there not money in retaining him, and should he not be kindly urged and advised to wear what his eyes require? I am too familiar with all these facts not to *know*, and hence here insist, that such foolish refusal to do what nature needs is one of the unnecessary causes of impaired vision.”^a

As I am on the subject of glasses, I am constrained to call attention to a matter which in America has attracted considerable attention. I allude to the unlicensed, unlimited, and ignorant sale of spectacles by itinerant hawkers, jewellers, and even some claiming the name of opticians.

The State, wisely considering that it is for the benefit of the community that potent drugs and medicines should not be sold except by those who possess certain knowledge of their properties, &c., issue, after due examination, a license to apothecaries. The public know then that they may safely get their prescriptions compounded by such apothecaries, and the more potent drugs are sold only on the written order of a duly qualified medical man.

Yet in the matter of the sale of spectacles, where infinite mischief may result from the use of unsuitable glasses, no restriction whatever exists upon their sale. Any one may call himself an optician and sell glasses to the public without let or hindrance. Surely these things ought not so to be. Moreover, many opticians, skilful in their business, take upon themselves, by reason of their optical knowledge, to prescribe special glasses for their customers; and grievous are the errors they at times commit. Knowing optics, they think they know all that is required, and they test the eye as they would test an optical instrument, ignorant or forgetful of the fact that it is also a living organ of the body, and cannot be treated from any other standpoint.

To prescribe suitable glasses for any individual case requires not only

^a B. Joy Jeffries. Boston. 1883.

a knowledge of optics, but a thorough knowledge of physiology and general medical training. The eye is only a part of the complex mechanism of sight, and what the oculist has to do is to treat the individual, and not his eye only. It must never be forgotten that he is dealing with a vital, living, complex organism, not with an inanimate optical instrument. And just as the apothecary (*quâ* apothecary) is not a physician, so the optician is not an oculist, and should not pretend to do what his training does not enable him to do intelligently.

I am glad to learn that already in Dublin, London, Edinburgh, and Glasgow, the more respectable opticians refuse to supply spectacles to their customers without the order of an oculist.

The want of physiological knowledge amongst opticians leads them at times into strange errors. One of them (I heard) professed to give glasses with which, at any age, the wearer could see both near and far. This he accomplished by correcting one eye for distance and the other for near sight. They would be vigorous eyes that could stand that long!

I have seen persons wearing glasses suitable for short sight who should have been wearing glasses of quite another kind, as they were over-long-sighted, and the consequence was persistent spasm of the accommodation, pain in the head, fatigue of the eyes, and often giddiness. But I need not dilate further on this point. All who for a moment reflect must know that the obtaining of suitable glasses is in many instances, especially in cases of astigmatism, one of the most delicate and difficult problems in medicine, taxing all the acumen and knowledge of the oculist, aided as as he is by the results of modern science.

Before putting any boy or girl to any trade, profession, or occupation, it would be well to consider carefully the question of the eyes. So many of the employments of modern life call for long and accurate use of the eyes, and this not only in the professions, or as clerks, but many of the trades even to a greater extent. No writing clerk in an office has to tax his sight more than has a bootmaker in the exercise of his trade. Yet I have often seen individuals affected with high myopia bound to some such trade—individuals for whom alone a country life was suitable; and not till they had ruined their sight by the work had they applied for advice, which came too late to save the eyes from blindness—a blindness which might so easily have been averted had their guardians possessed a knowledge of the dangers to be avoided.

Concerning colour-blindness I have only a few words to say. Many individuals are unable to recognise any colour at all. To them all nature is painted in black and white, like an engraving. Many others are incapable of recognising some colours, whilst they see others with distinctness. The most usual colours to be lost are the complimentary colours, red and green. To such the red cherries and the green leaves of the tree seem the same colour, and both appear as dark gray.

Colour-blindness, which is usually a congenital and incurable condition, occurs more frequently in men than in women. Many accidents on railways and at sea are traceable to this defect existing in the railway-guards or sailors, causing them to mistake the signal-lights; for it is just those colours most used for signal-lights, red and green, the perception of which is most frequently lost in cases of colour-blindness.

It is hard for those who are in possession of good colour sense to appreciate the strange out-look obtained by those who are wholly colour-blind, and to whom all the various tints of sky and grass, and foliage and flowers, are but degrees of gray.

It is of the utmost importance to the public safety that all sailors, railway officials, and others who have to do with signalling, &c., should be tested for this defect, for many are themselves unaware of their infirmity, as they have never seen otherwise.

In most continental countries, and in America, this is done systematically. I regret to say that in these countries much laxity still exists in this matter, and much injury results. It would be a wise and simple expedient to have all children (especially boys) examined once by a competent person during their school-days for colour-blindness. As the affection is congenital and incurable, it is better to know of its existence before choosing a life occupation. In many occupations and professions colour-blindness is no injury; in others, as wood-carvers, steel-engravers, and etchers, colour-blindness is a positive advantage, as they are better able to observe the true value of light and shade, on which alone the success of their work depends. Moreover, it is cruel to allow a boy (or girl) to spend time and money in preparing for an occupation for which he is unfitted, and then, at the critical moment, discover his infirmity; or, worse still, allow him to accept an employment requiring correct colour-sight (as sailor, or railway guard, or engine-driver, or signal-man), and, perhaps, bring upon himself disgrace and ruin, and on his fellow-beings death and calamity, by permitting a collision to take place which correct colour-vision on his part would have prevented.

I know in this brief survey of some of the points of my subject I have left unsaid many things that I ought to have said (I have wholly omitted the special risks to the eyes attending particular occupations); but in a lecture of this sort one can only touch the fringe of knowledge, without attempting to wrap oneself round with the mantle; still I hope I have said enough to show that there is much to be known, and that "Our Eyes and Our Industries" is a subject of personal importance to each one present.

"Sterben ist nichts, doch
Leben und nicht sehen, das
Ist ein Unglück."—(GÆTHE) *W. Tell.*

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, November 7, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.		Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.
Armagh -	18·9	18·9	25·2	12·6	Limerick -	16·8	18·2	14·0	11·2
Belfast -	24·3	23·8	23·4	25·5	Lisburn -	4·3	12·9	17·2	4·3
Cork -	23·8	21·0	23·8	22·4	Londonderry	27·2	16·0	19·2	25·6
Drogheda	—	17·6	13·2	17·6	Lurgan -	23·0	4·6	9·2	23·0
Dublin -	24·0	22·7	23·3	30·3	Newry -	15·6	19·5	7·8	19·5
Dundalk -	3·9	15·6	3·9	15·6	Sligo -	—	57·2	10·4	15·6
Galway -	19·0	45·6	3·8	0·0	Waterford -	28·8	16·8	9·6	9·6
Kilkenny	—	28·2	23·5	9·4	Wexford -	13·5	27·0	13·5	31·5

In the week ending Saturday, October 17, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 18·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·7 per 1,000. In Glasgow the rate was 19·4, and in Edinburgh it was 14·7.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 22·1 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in eleven of the districts to 7·2 in Waterford—the 12 deaths from all causes registered in that district comprising 3 from diarrhoea. Among

the 119 deaths from all causes registered in Belfast are 2 from scarlatina, 1 from whooping-cough, 3 from enteric fever, and 10 from diarrhœa.

In the Dublin Registration District the registered births amounted to 132—66 boys and 66 girls; and the registered deaths to 164—86 males and 78 females.

The deaths, which are 6 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·6 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 24·0 per 1,000. During the first forty-one weeks of the current year the death-rate averaged 24·9, and was 2·4 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 22, being 6 under the number for the preceding week and 3 below the average for the 41st week of the last ten years. They comprise 2 from whooping-cough, 9 from enteric fever, and 9 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 40, being 1 under the number for the preceding week. Thirteen enteric fever patients were discharged, 3 died, and 154 remained under treatment on Saturday, being 24 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 3 cases of measles, and 2 of typhus, but no case of scarlatina was received. Three cases of measles, 3 of scarlatina, and 6 of typhus remained under treatment in hospital on Saturday.

Twenty-seven deaths from diseases of the respiratory system were registered, being 13 over the low number for the preceding week and 1 over the average for the 41st week of the last ten years. They comprise 14 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 24, the mortality in twenty-eight large English towns, including London (in which the rate was 17·7), was equal to an average annual death-rate of 18·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 19·7, and in Edinburgh it was 17·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·5 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in Galway, Newry, Dundalk, Drogheda, Lurgan, and Armagh, to 14·1 in Kilkenny. The 6 deaths from all causes registered in the last-named district comprise 3 from diarrhœa. Among the 117 deaths from all causes registered in Belfast are 1 from scarlatina, 2 from enteric

fever, and 4 from diarrhoea. The 30 deaths in Cork comprise 1 from each of the following diseases--Scarlatina, whooping-cough, and diphtheria. The 11 deaths in Sligo comprise 1 from small-pox and 1 from diarrhoea. Referring to the death from small-pox, the Assistant Registrar of No. 1 District in which it occurred remarks :—" 5 months old, child of a tramp. I am not aware of any other case in town."

In the Dublin Registration District the registered births amounted to 179—89 boys and 90 girls; and the registered deaths to 153—82 males and 71 females.

The deaths, which are 8 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·0 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 22·7 per 1,000. During the first forty-two weeks of the current year the death-rate averaged 24·9, and was 2·3 under the mean rate in the corresponding period of the ten years 1881—1890.

Twenty-three deaths from zymotic diseases were registered, being equal to the average for the corresponding week of the last ten years, and 1 over the number for the week ended October 17. They comprise 4 from whooping-cough, 1 from diphtheria, 5 from enteric fever, 9 from diarrhoea, and 1 from dysentery.

Forty-two cases of enteric fever were admitted to hospital, being 2 over the number of admissions for the preceding week. Twenty-five enteric fever patients were discharged, 4 died, and 167 remained under treatment on Saturday, being 13 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include 3 cases of scarlatina, but no cases of either measles or typhus were received.

The number of deaths from diseases of the respiratory system registered is 22, being 6 under the average for the corresponding week of the last ten years, and 5 under the number for the week ended October 17. The 22 deaths comprise 13 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 31, the mortality in twenty-eight large English towns, including London (in which the rate was 16·7), was equal to an average annual death-rate of 18·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·5 per 1,000. In Glasgow the rate was 27·5, but in Edinburgh it was only 13·1.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 21·0 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·8 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·7 in Kilkenny—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 115 deaths from all causes registered in Belfast are 1 from scarlatina, 2 from whooping-cough, 3 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 137—72 boys and 65 girls; and the registered deaths to 161—82 males and 79 females.

The deaths, which are 4 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·2 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 23·3 per 1,000. During the first forty-three weeks of the current year the death-rate averaged 24·9, and was 2·2 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 19, being 5 below the average for the corresponding week of the last ten years, and 4 under the number for the week ended October 24. The 19 deaths comprise 3 from whooping-cough, 1 from diphtheria, 7 from enteric fever, and 6 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 36, being a decline of 6 as compared with the admissions for the preceding week. Twenty-seven enteric fever patients were discharged, 3 died, and 173 remained under treatment on Saturday, being 6 over the number in hospital on Saturday, October 24.

The hospital admissions for the week include, also, 1 case of each of the following diseases:—Measles, scarlatina, and typhus. One case of measles, 5 cases of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Thirty-two deaths from diseases of the respiratory system were registered, being 10 over the number for the preceding week, and 1 over the average for the 43rd week of the last ten years. They consist of 21 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 1 from laryngitis.

In the week ending Saturday, November 7, the mortality in twenty-eight large English towns, including London (in which the rate was 17·8), was equal to an average annual death-rate of 19·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·2 per 1,000. In Glasgow the rate was 27·8, and in Edinburgh it was 21·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·7 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in eight of the districts to 4·6 in Lurgan—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 125 deaths from all causes registered in Belfast are 1 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 163—83 boys and 80 girls; and the registered deaths to 209—100 males and 109 females.

The deaths, which are 33 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·4 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 30·3 per 1,000. During the first forty-four weeks of the current year the death-rate averaged 25·0, and was 2·1 under the mean rate in the corresponding period of the ten years 1881–1890.

Thirty-three deaths from zymotic diseases were registered, being 8 over the average for the corresponding week of the last ten years, and 14 over the number for the week ended October 31. They comprise 1 from measles, 2 from scarlatina, 1 from whooping-cough, 14 from enteric fever (being 9 over the average number of deaths from that disease in the corresponding week of the last ten years), 6 from diarrhœa, 3 from dysentery, and 1 from erysipelas.

Thirty-eight cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week, but 4 under the number for the week ended October 24. Twenty-one enteric fever patients were discharged, 2 died, and 191 remained under treatment on Saturday, being 15 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 2 cases of measles and 1 case of scarlatina, but no cases of typhus were received. Two cases of measles, 6 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Diseases of the respiratory system caused 35 deaths, being 2 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the week ended October 31. The 35 deaths comprise 25 from bronchitis and 7 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of October, 1891.*

Mean Height of Barometer,	-	-	-	29·626 inches
Maximal Height of Barometer (on 31st, at 9 a.m.),				30·647 „
Minimal Height of Barometer (on 13th, at 3 30 p.m.)				28·251 „
Mean Dry-bulb Temperature,	-	-	-	48·2°.
Mean Wet-bulb Temperature,	-	-	-	45·8°.
Mean Dew-point Temperature,	-	-	-	43·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·280 inch.
Mean Humidity, - - - - -	-	-	-	83·3 per cent.
Highest Temperature in Shade (on 4th)	-	-		62·7°.
Lowest Temperature in Shade (on 25th),	-	-		33·0°.
Lowest Temperature on Grass (Radiation) (on 25th),				28·0°.
Mean Amount of Cloud, - - - - -	-	-	-	41·6 per cent.
Rainfall (on 13 days), - - - - -	-	-	-	3·590 inches.
Greatest Daily Rainfall (on 13th),	-	-	-	1·176 inch.
General Directions of Wind,	-	-	-	S., S.W., W.

Remarks.

October, 1891, may well be described as a month of contrasts. At the beginning some fine, warm autumnal days were experienced, interrupted indeed by a gale and heavy rain on the 5th. From the 8th to the 18th was a period of violent gales and heavy rains, with brief intervals of fine weather and very unsteady temperature. Then followed a week of low barometer, but fair weather and low temperature in Ireland, heavy rains and gales in England. The closing period, from the 25th to the 31st, was fine and quiet, with ground frosts and local fogs at night, bright and warm sunshine by day, with easterly winds.

In Dublin the arithmetical mean temperature (49·5°) was slightly below the average (49·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 48·2°. In the twenty-six years ending with 1890, October was coldest in 1880 (M. T. = 45·4°), and in 1885 (M. T. = 45·5°), and warmest in 1876 (M. T. = 53·1°). In 1886, the M. T. was as high as 52·0°; in the year 1879 (the “cold year”), it was 49·7°. In 1887, it was as low as 47·3°; in 1888, it was 49·1°; in 1889, it was only 48·1°; and in 1890, it was 51·7°.

The mean height of the barometer was 29·626 inches, or 0·214 inch below the corrected average value for October—namely, 29·840 inches. The mercury rose to 30·647 inches at 9 a.m. of the 31st, and fell to 28·251 inches at 3 30 p.m. of the 13th. This was the lowest reading recorded in Dublin since the memorable 8th of December, 1886, when the barometer sank to 27·758 inches at 2 30 p.m. The observed range

of atmospherical pressure was, therefore, not less than 2·396 inches—that is, a little less than two inches and four-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 48·2°, or 8·2° below the value for September, and 9·0° below that for August, 1891. The arithmetical mean of the maximal and minimal readings was 49·5°, compared with a twenty-five years' average of 49·7°. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × ·486), the value was 49·3°, or 0·2° below the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865–89, inclusive (49·5°). On the 4th, the thermometer in the screen rose to 62·7°—wind, S.S.W.; on the 25th the temperature fell to 33·0°—wind, W.N.W. The minimum on the grass was 28·0° also on the 25th; on six nights the thermometer sank to or below 32° on the grass.

The rainfall was as much as 3·590 inches, distributed over only 13 days—the rainfall was above, while the rainy days were largely below, the average. The average rainfall for October in the twenty-five years 1865–89, inclusive, was 3·106 inches, and the average number of rainy days was 17·6. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890 only ·639 inch fell on but 11 days, in 1884 only ·834 inch was measured on but 14 days, and in 1868 only ·856 inch on 15 days. In 1888, the rainfall was 1·227 inch on 16 days, and in 1889 no less than 4·853 inches fell on 22 days. From these figures it will be seen that October, 1890, proved the driest on record for more than a quarter of a century at least.

Solar halos were seen on the 2nd, 7th, and 22nd. High winds were noted on 12 days, and attained the force of a gale on as many as eight occasions—the 5th, 8th, 11th, 13th, 14th, 16th, 18th, and 27th. The atmosphere was more or less foggy in Dublin on the 15th, 22nd, 23rd, 29th, and 30th. Lightning was seen on the evenings of the 1st, 6th, and 20th. Hail fell on the 17th.

Favourable weather held in Dublin during the first three days.

Strong southerly and southwesterly winds, rising to the force of a gale in different parts of Western Europe at different times, and heavy rains, were the leading features of the weather of the week ended Saturday, the 10th. Dublin escaped the bad weather to a great and even a singular extent. Throughout the period, a large anticyclone was found over Central Russia, where the barometer stood persistently as high as 30·4 to 30·6 inches. At the same time a succession of large and deep depressions passed northwards or northeastwards along the Atlantic seaboard of Western Europe, causing the high winds and heavy rains already mentioned. From time to time the main system of low pressure threw off secondary depressions, which travelled across England and the North

Sea, so that broken weather spread to those districts also. In fact, the weather in England was much worse than that experienced in Dublin, where many fair intervals were enjoyed. On Tuesday evening lightning was seen, and thunder and lightning occurred in the S. and S.E. of England on Wednesday afternoon and night. In Dublin the mean barometrical pressure was only 29·493 inches. The barometer fell from 30·038 inches at 9 a.m. of Sunday (wind, S.S.W.), to 28·990 inches at 9 a.m. of Tuesday (wind, S.W.). The corrected mean temperature was 54·2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 53·2°. The screened thermometers rose to 62·7° on Sunday, the 4th. There were gales on Monday and Thursday. Lightning was seen on Tuesday evening. A solar halo appeared next morning. The rainfall was ·907 inch on four days, the maximal fall in 24 hours being ·659 inch on Monday. The prevailing winds were S. and S.W.

A most tempestuous, cold, and rainy period—such is the record of the week ended Saturday, the 17th. No less than three barometrical depressions of the first importance travelled across the British Islands and the adjoining seas during the week, while numerous secondary depressions of less intensity were observed from time to time. The first of the prime disturbances lay to the N.W. of Ireland on Sunday morning, when the barometer was as low as 28·82 inches at Belmullet. Fresh gales from S. to S.W. and heavy rain accompanied this disturbance. Monday, the 12th, was fine but not settled, and in the evening heavy showers fell. On Tuesday the most intense of the three primary depressions mentioned above passed right over Ireland. The centre of the cyclone crossed the Co. Antrim in the evening, and the barometer fell to about 28 inches—at 6 p.m. the reading at Malin Head was 28·08 inches, and it was blowing a whole gale from E.N.E. At the same hour the barometer read 28·13 inches at Donaghadee, where there was a fresh gale from W.S.W. Thunder and lightning occurred in many places, and torrents of rain fell—particularly in Dublin (1·168 inches in 5 hours on Tuesday). The third great depression was found right over the North of Ireland at 8 a.m. of Friday, the 16th, the barometer being down to 28·87 inches near the centre. It caused sudden and violent gales with heavy falls of rain. On Saturday, the wind at last veered to N.W. and the weather moderated and brightened. In Dublin the mean height of the barometer was only 29·255 inches—pressure ranging between 28·251 inches at 3 30 p.m. of Tuesday (wind, S.W.) and 29·894 inches at 9 p.m. of Saturday (wind, W.N.W.). The corrected mean temperature was 48·6°, the mean dry bulb readings at 9 a.m. and 9 p.m. being still lower—viz., 47·2°. The thermometers in the screen rose to 57·9° on Tuesday, having fallen to 39·2° during the preceding night. Rain fell daily to the total amount of 2·437 inches. Of this quantity, 1·176 inches fell on Tuesday. Hail was noted on Saturday. The prevailing winds were S. and S.W.

As regards the week ended Saturday, the 24th, until Wednesday the weather remained in a very disturbed state in all parts of the United Kingdom. After that day, however, a marked improvement took place in Ireland and Scotland, while it remained wet and tempestuous in England until Friday. On Sunday an extensive depression passed over Ireland towards N.N.E., "surging" eastwards at the same time. A downpour of rain and violent southerly gales accompanied this disturbance, the high spring tides increasing the damage done by it along the coasts. This system had scarcely passed away when a new and still more serious depression arrived off the west coast of Ireland, where the barometer fell below 28·60 inches on Wednesday morning. And now a curious thing happened—the barometer began to rise over Ireland while it continued to fall over England. The result was that in the former country the wind moderated and the sky cleared, while strong gales and continuous rain were reported from England. The last four days were really beautifully fine on the east coast of Ireland. Winter set in with great severity in the North of Europe during this week—the 8 a.m. temperatures at Archangel were 19°, 15°, 6°, 8°, 14°, and 18°, up to Friday. In Dublin the mean height of the barometer was 29·356 inches—pressure ranging between 29·917 inches at 9 a.m. of Sunday (wind, S.S.W.) and 28·904 inches at 9 a.m. of Wednesday (wind, S.). The corrected mean temperature was 47·5°. The highest shade temperature was 56·6° on Tuesday; the lowest was 39·0° on Saturday. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·7°. Rain fell in measurable amount on two days, the total fall being ·244 inch, of which ·200 inch was referred to Sunday. The prevailing winds were—first, S., afterwards W. Lightning was seen on Tuesday evening.

A remarkable and most acceptable improvement in the weather was observed during the week ended Saturday, the 31st, more particularly in Ireland and Scotland. Already on Sunday an anticyclone, or area of high atmospherical pressure, was in course of formation over Scandinavia and the Norwegian Sea. This system moved gradually southwards and at the same time increased in intensity, until towards the close of the week it covered the British Islands and adjacent districts with central readings of the barometer as high as 30·74 inches. Exceptionally fine, quiet, bright weather held in Ireland after Tuesday. But up to and including that day strong easterly or northeasterly winds and much cloud prevailed, owing to the advance across the Peninsula and France of a succession of low pressure systems. These caused gloomy, wet, and stormy weather in the South of England, and heavy rainfalls in Spain and France. After Tuesday, conditions became tranquil and the sky cleared, so that sharp frosts and fogs occurred at night, while the days were sunny, dry, and bracing. At the end of the week depressions were again appearing over Northern Europe, where with a consequent shift of

wind to S.W. a sudden rise of temperature took place, amounting at Haparanda, on the Gulf of Bothnia, to 33° . At that station the thermometer read— 1° F. at 8 a.m. of Thursday but $+32^{\circ}$ F. at the same hour on Friday. In Dublin the mean height of the barometer was 30.296 inches, pressure steadily increasing from 29.905 inches at 9 a.m. of Sunday (wind, W.N.W.) to 30.647 inches at 9 a.m. of Saturday (wind, E.S.E.). The corrected mean temperature was 45.4° . The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45.1° . The thermometers in the screen rose to 54.7° on Monday, having fallen to 33.0° on Sunday. Very light showers fell on Sunday and Tuesday, but yielded only .002 inch of rain. There was an easterly gale on Tuesday afternoon. The prevalent winds during the week were N.E. and E.

The rainfall in Dublin during the ten months ending October 31st has amounted to 21.610 inches on 148 days, compared with 12.366 inches on 123 days during the same period in 1887, 19.219 inches on 147 days in 1888, 24.789 inches on 169 days in 1889, 21.494 inches on 162 days in 1890, and a 25 years' average of 22.840 inches on 160.4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was as much as 5.122 inches on 14 days. Of this amount 1.180 inches fell on the 5th, .750 inch on the 13th, .720 inch on the 10th, and .680 inch on the 18th. The rainfall in October, 1890, was only .600 inch, distributed over 13 days. Of this quantity .160 inch fell on the 6th, and .120 inch on the 14th. The rainfall at Greystones in October, 1889, was no less than 6.935 inches on 22 days, or more than eleven times as great as the fall in October, 1890.

From January 1st, 1891, up to October 31st, rain fell at Knockdolian, Greystones, on 140 days, to the total amount of 24.744 inches.

HONOUR TO AN IRISH AUTHOR.

It will interest our readers to learn that Dr. Lindsay's "Climatic Treatment of Consumption" has been translated into French by Dr. F. Lalesque, Chef de Service au Sanatorium d'Arcachon. The publisher is M. Octave Doin, Place de l'Odéon, Paris. A translation of the same work into Polish is about to be undertaken by Dr. Neugebaur, of Warsaw. When reviewing Dr. Lindsay's book, in August, 1887, we expressed the opinion, without fear of contradiction, that it was an excellent book. Its subject-matter is well arranged and embodied in terse, clear language. It rivets the reader's attention, while it can scarcely fail to instruct even the most erudite student of medical climatology. We are glad to see that our encomiums are endorsed by our continental *confrères* in both France and Poland.

PERISCOPE.

NEW YORK POST-GRADUATE SCHOOL.

THIS School was founded in 1882, the first in America to offer organised instruction to medical men after graduation. Its usefulness is increasing and is yearly becoming more fully appreciated, the attendance during its last session having exceeded that of any previous year. It issues a periodical five times a year; and a supplementary number, containing details of classes, list of matriculates, and report of its dispensary and hospital, is now before us. In the past session 469 practitioners attended—from 41 States, from the Dominion, and from the West Indies. The hospital contains 114 beds—in male, female, and children's orthopædic wards, besides Babies' Wards in a separate building, as well as rooms for private patients. Undergraduates are not admitted to the School, which is open to any legally qualified practitioner. The fee for a twelve-weeks ordinary course is £30, in the autumn, winter, or spring sessions; £15 for the summer course; with extra fees for operative surgery, gynæcology, ophthalmology, and anatomy (on the dead body), and some other special subjects. The School is regularly chartered by the State.

THE WOOD ANEMONE.

M. DUPAY (*Congrès des Sociétés Savantes*) reports that the active principle of the wood anemone, which occurs in well-defined needle-like crystals, is a very energetic medicinal agent. In toxic doses it produces hiccough, drowsiness, trembling of the limbs, bloody stools, followed by convulsions, and finally death occurs by paralysis. He believes it is valuable in chronic bronchitis, whooping-cough, and rheumatism.—*Les Nouveaux Remèdes*, No. 13, 1891.

THE KENTUCKY POISONINGS.

MEDICAL jurists will read with interest a paper by Mr. Chenoweth (Asst. Prof. Surgery, University of Louisville, Ky.) in the *American Practitioner and News* of 15th Aug. It will be remembered that on the 15th May of this year there was a wedding at Snook-herr, near Louisville, at which about 80 people, including servants, were present. Within twenty-four hours of partaking of lunch seventy of the party were taken violently ill. Suspicions of malicious poisoning were excited, and some physicians went so far as publicly to attribute the symptoms to arsenic. "On the plate of each guest was placed a leaf of lettuce, a spoonful of chicken salad, a spoonful of mushrooms, olives, beaten biscuit, and a cracker; coffee, chocolate, ice-cream, and cake were served later. Water, 'from

a copious spring,' was drunk by nearly all." The author concludes, after an elaborate detailed investigation, that there was no mineral poison, that the mushrooms were not to blame, and that the mischief was due to the chicken of the salad. Of 81 persons 11 escaped illness, and these had eaten neither mushrooms nor salad, but had partaken of everything else. Many of the sick had eaten no mushrooms; 68 of the 70 had eaten salad or chicken, two only affirming that they had eaten none of it. No fowl-cholera was epidemic at the time, and the author concludes that a putrefactive alkaloid was generated in the chicken's flesh after cooking.

DEATHS FROM CHLOROFORM AND ETHER.

IN the British Royal Infirmary, during the past 17 years, chloroform and chloroform and ether mixed, have been administered 5,902 times with 3 deaths, and ether 704 times with one death. Particulars of the four fatal cases are given by W. H. Harsant, F.R.C.S., in the *Bristol Medico-Chirurgical Journal* for September.

PEROXIDE OF HYDROGEN IN GONORRHOEA.

DR. B. W. RICHARDSON recommends (*Asclepiad*, XXXI.) an injection consisting of 10 vol. solution of the peroxide of hydrogen, one ounce; tannin, ten grains; distilled water, three ounces. Half-an-ounce to be injected twice daily. In a case he records the discharge had entirely ceased within a week, and ten weeks afterwards had not returned.

PEROXIDE OF HYDROGEN IN PLEURO-PNEUMONIA.

DR. B. W. RICHARDSON describes (*Asclepiad*, XXXI., page 215) a new apparatus by which ozonised oxygen can be administered by inhalation; 30 vol. peroxide of hydrogen, covered by a film of ether, has solution of permanganate of potassium added to it. The gas is pleasant to inhale, soothes cough, and in a recorded case seems to have had a beneficial effect.

VOLTAIC NARCOTISM.

DR. B. W. RICHARDSON describes (*Asclepiad*, XXXI.) some old experiments in which he caused local anæsthesia by applying the positive pole of an electric battery over some narcotic. In many cases complete local anæsthesia was obtained; whilst the check experiments of applying the solutions and the current separately were followed by no anæsthesia.

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